

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

KENNETH BUTLER, SR. an individual.)	CIVIL ACTION NO:
)	No. 1:12-cv-01716-SEB-DML
Plaintiff,)	
)	DECLARATION AND EXPERT
vs.)	REPORT OF RONALD B.
)	KEMNITZER REGARDING NON-
BALKAMP INC., et al.)	INFRINGEMENT OF U.S. DESIGN
)	PATENT NO. D500,646 S DATED
Defendants.)	DECEMBER 23, 2013
)	

I, Ronald B. Kemnitzer, depose and declare as follows:

1. I am Ronald B. Kemnitzer. I reside at 2103 Grandin Road, Roanoke, Virginia 24015. I have been retained by the law firm of Troutman Sanders, LLP on behalf of the defendants Genuine Parts Company, Balkamp Inc., and National Automotive Parts Association in the design patent suit brought by Kenneth Butler, Sr. I have been asked to provide my opinions on the subject of alleged infringement of United States Patent No. D500,646 S (“the ‘646 patent”) by the Spinning Impact Extension.

2. I am charging \$405 per hour for my work, including study and testimony, in this case. My compensation is in no way tied to the outcome of this litigation.

3. This declaration and report contains a complete statement of all opinions I will express on the issue of alleged infringement of the ‘646 patent and the basis and reasons for them, as well as the facts or data I considered in forming them.

SUMMARY OF OPINIONS

4. As I will explain in detailed analysis, based on my understanding of the pertinent law, it is my opinion that the ‘646 patent is not infringed by the accused Spinning Impact Extension.

5. I am continuing my study and analysis of the information and materials that I have considered in preparing this declaration and report. I reserve the right to supplement, modify and/or enlarge my opinions and this declaration and report during the course of that further study and based on any new information, including discovery, testimony, or other evidence, received that is relevant to my opinions.

PROFESSIONAL BACKGROUND

6. As shown on my *curriculum vitae*, attached as **Exhibit 1**, I have been a practicing industrial designer for over forty years. I received a Masters of Arts degree with a major of Design in 1973 from Northern Illinois University, DeKalb, Illinois. I also received a Bachelors of Science degree with a major of Industrial Design in 1967 from the University of Cincinnati, Cincinnati, Ohio.

7. I have also served as a full-time industrial design educator for over thirty-five years. I am currently a tenured Full Professor at Virginia Tech University, Blacksburg, Virginia, in the area of Industrial Design and have served as Chair of the Industrial Design program from 2008 to 2011. I have been at Virginia Tech since 2004. I have also been a tenured professor at the following universities: (1) University of Kansas, Lawrence, Kansas from 1997 to 2004 (non-tenured Assistant Professor from 1994 to 1997); Kansas City Art Institute, Kansas City, Missouri from 1981 to 1989; and (3) Michigan State University, East Lansing, Michigan from 1978 to 1981 (non-tenured Assistant Professor from 1973 to 1978).

8. My professional experience includes working as: (1) President of the consulting organization Design Management Center Villa Tosca, USA from 2001 to present; (2) Vice-President of the design consulting firm Midwest Design Inc., Kansas City, Missouri from 1981 to 1985; and (3) Senior Designer at Sunbeam Appliance Company, Oak Brook, Illinois from 1970 to 1972, and (4) Staff Designer at Black and Decker Manufacturing Company, Towson, Maryland from 1968 to 1970. Additionally, I founded Kemnitzer Design, Inc. in 1982 and was the President until 2003, which was a design consulting firm specializing in industrial design and

visual merchandising. Kemnitzer Design, Inc. served a variety of clients representing a wide range of product categories and industries, including Mac Tools, Rival Appliance Company, Select Brands Appliances, Sprint PCS, Ambassador Cards, B&E Aerospace, Cramer Sports Products, Fixtures Furniture Company, Lee Apparel Company, Bushnell Sports Optics, Medi-Flex Hospital Products, Hallmark Cards, Paoli Furniture Company, Virco Manufacturing Company, World2Toys, Script-Pro, LLC, and others.

9. I was elected President and Chairman of the Board of Directors of the Industrial Designers Society of America (“IDSA”). I was also elected to the IDSA Academy of Fellows, a prestigious honor reserved for those “who have earned the special respect and affection of the membership through distinguished service to the Society and to the profession as a whole.”

10. I am an inventor on the following patents:

Patent Number	Date Issued	Title
D219,394	12/08/1970	Cordless Electric Lawn Mower
D231,146	4/2/1974	Hair Dryer with Mist Dispenser
3,849,912	11/26/1974	Educational Toy
D234,193	1/28/1975	Combined Dial and Hand For A Clock
D236,267	8/12/1975	Façade For An Electric Humidifier
D321,617	11/19/1991	Chair Arm
D348,016	6/21/1994	Cable Locator
5,431,202	7/11/1995	Medical fluid flow control system and compounder apparatus
D362,638	9/26/1995	Receiver for Cable and fault locator system
D381,828	8/5/1997	Chair
D408,165	4/20/1999	Chair

D408,663	4/27/1999	Chair Arm
5,954,396	9/21/1999	Chair construction
5,961,134	10/5/1999	Apparatus for housing and transporting, and furnishing an adjustable user-platform for a portable computer
D425,319	5/23/2000	Chair with end panel
D437,124	2/6/2001	Chair
D554,259	10/30/2007	Oral Appliance Device
D554,260	10/30/2007	Oral Appliance Device

11. I have authored and/or co-authored the following publications in the last 10 years:

- *An Interdisciplinary Design Course for Pervasive Computing*, published in IEEE Pervasive Computing. Volume 11, Number 1, January-March 2012.
- *Enhancing Biomedical Design Through Design Thinking*, accepted for presentation by the Engineering in Medicine and Biology Conference, Minneapolis, MN, September, 2009.
- *Cultural Aspects of Design Thinking*, presented at and published by the 2009 IDSA National Education Symposium, Miami, FL, September, 2009.
- Things You Probably Didn't Think Of.... Tips for creating a successful interdisciplinary product development program, presented at and published by the 2008 IDSA National Education Symposium, Phoenix, AZ, September, 2008.
- *Cultural Modifiers of Visual Aesthetics*, accepted for presentation and publication by the 2004 National Education Conference of the Industrial Designers Society of America, Pasadena, CA, September, 2004.
- *Are You Talking to Me? Teaching User-Centered Design*, accepted for presentation and publication by the 2003 National Education Conference of the Industrial Designers Society of America, New York, New York, August, 2003.

12. In the design patent context, it is the appearance of a product, not its function, that is at issue. As a practicing industrial designer, my work has required me to provide ornamental designs for manufactured products that are useful and have functions in everyday life such as household consumer products, electronic products, sports equipment, medical products, and commercial furniture. During my career as a practicing industrial designer, I designed and

supervised the design of many (150+) products. I have designed a variety of products as an industrial designer, from power tools, to toys, to medical products, to kitchen appliances, to office system furniture, to large case pharmaceutical products and more.

13. This is not the first time in my professional career that I have worked on tool matters and I have extensive experience in that area. Early in my career as a designer for the Black & Decker Manufacturing Company, I designed a wide variety of power tools that included drills, circular saws, hand grinders, radial arm saws, lawn mowers, and others. I also worked on a series of hand-held automotive power tools for Mac Tools during my time with Kemnitzer Design, Inc. My work in tool design required not only a knowledge of tool use, but also a working knowledge of metal fabrication and molding processes, and high-strength plastic forming processes. My experience designing power tools plus my life-long interest in using hand and power tools in automobile repair and general mechanical tinkering has qualified me to opine on the '646 patent at issue.

14. My design work has been recognized nationally and internationally. I have received the following awards as part of my work with Kemnitzer Design, Inc.: (1) Gold Good Design Award from the Chicago Athenaeum Museum of Architecture and Design in 1997 and 2001; (2) Gold Award in the 1991 *Plant Engineering* magazine, Product of the Year competition; and (3) Bronze award in the 1992 Industrial Design Excellence Awards sponsored by Business Week magazine and IDSA. I also received second place in the “Purity & Cleaners 2” Design Competition Workshop from 1999 to 2000, sponsored by Panasonic USA to design a new vacuum cleaner for the North American retail market. In 2000, I received first place in the “Washing the Time” Competition Workshop, organized by Maytag International to design a new laundry washing machine for the European market. Academically, I was named one of 25 educators by the Design and Future council of *Design Intelligence* as the “most admired and respected in the fields of interior design, interior architecture, architecture design, architectural engineering, industrial design, and landscape architecture” in 2008, 2009, and 2011.

15. As a practicing industrial designer, it is my standard procedure to thoroughly examine all design patents that might relate to the product that I am designing. By understanding the proportions, details, and other visual embodiments of products that are protected, I can avoid any potential conflict, as there are virtually unlimited visual options to any ornamental design, and to many utilitarian designs as well. In my role as a design educator, I also teach my students the legal importance and ethical foundation for implementing such procedures as common practice. I believe that based on my many years of observing consumers purchasing and using hand and power tools, I am well qualified to testify as to how an ordinary observer would perceive and assess designs of tools such as the one described by '646 patent. As an active designer of consumer products, I observed consumer behaviors during both the purchasing process and usage of many products. By paying careful attention to how consumers actually used products, I have developed a sensitivity to the nuances of their behavior, such as how they operate products such as socket wrench tools and accessories. These observations have provided insight as to the visual attributes they might consider important. These are assets that I believe qualify me to opine on how ordinary consumers purchase and use products of all kinds, and in this case particularly, a socket wrench tool handle.

BACKGROUND ON INDUSTRIAL DESIGN

16. Industrial design involves the design of products with a focus on those aspects of the product that relate most directly to the user, such as its visual impression or tactile feel. IDSA defines industrial design as “the professional service of creating and developing concepts and specifications that optimize the function, value, and appearance of products and systems for the mutual benefit of both user and manufacturer.” See Exhibit 2, attached hereto. Industrial design involves considering various manufacturing processes and materials in the design of a product, with the goal of creating a design that can be profitably produced and still fulfill all of its needs. At the same time, industrial design focuses on the psychological requirements of the consumer, including aesthetics and an operational interface that helps the consumer understand

how to use the product properly and in an enjoyable manner. In sum, industrial designers focus on the integration of the functional and psychological requirements of products. As an industrial designer, I am qualified to give opinions on the appearances of products.

INFORMATION AND MATERIALS CONSIDERED

17. I have considered the following information and materials in forming my opinions:

- Plaintiff's Complaint.
- Defendants' Answer.
- '646 patent, its prosecution history, and all of its cited references. A true and correct copy of the '646 Patent is attached hereto as **Exhibit 3**.
- The commercial embodiment of the '646 patent designated "3/8 KB USA."
- The accused Spinning Impact Extension 3/8" drive—7" length, 1/2" drive—8" length, and 3/4" Dr—10" length.
- U.S. Design Patent No. D475,589 ("the '589 Patent"), issued on June 10, 2003. A true and correct copy of the '589 Patent is attached hereto as **Exhibit 4**.
- U.S. Patent No. 6,263,766, issued on July 24, 2001.
- U.S. Patent No. 5,797,300, issued on August 25, 1998.
- U.S. Patent No. 4,344,340, issued on August 17, 1982.
- U.S. Patent No. 4,041,811, issued on August 16, 1977.
- U.S. Patent No. 4,004,476, issued on January 25, 1977.
- U.S. Patent No. 3,575,069, issued on April 13, 1971.
- U.S. Patent No. 2,071,543 ("the '543 Patent"), issued on February 23, 1937. A true and correct copy of the '543 Patent is attached hereto as **Exhibit 5**.
- U.S. Patent No. 1,775,402, issued on September 9, 1930.
- U.S. Patent No. 1,578,065, issued on March 23, 1926.
- Where applicable, I also reviewed the prior art cited in these patents.
- "M-110 1/4-Drive Convertible Handle and Extension - J. H. Williams, The Super Company", <http://home.comcast.net/~alloy-artifacts/williams-supercompany.html>, attached hereto as **Exhibit 6**.

- U.S. Patent No. 3,650,165 (“the ‘165 Patent”), issued on May 21, 1972. A true and correct copy of the ‘165 Patent is attached hereto as **Exhibit 7**.
- Snap-On® SG-6 as shown at “Snap-On – Bluepoint Tools”, Alloy Artifacts, available at <http://home.comcast.net/~alloy-artifacts/snapon-bluepoint-tools-p2.html>, attached hereto as **Exhibit 9**.
- Plaintiff’s Disclosure of Asserted Claims and Preliminary Infringement Contentions, served on August 1, 2013.
- Plaintiff’s Responses to Defendants’ First Set of Interrogatories.
- Joint Claim Construction Statement dated December 3, 2013.

TESTIMONY WITHIN THE LAST FOUR YEARS

18. Over the last four years, I have provided support as an expert in thirteen federal district court patent lawsuits and patent appeal/review matters. During that time period, I have testified as an expert at trial or by deposition in two cases (my client is underlined):

<u>Date:</u>	<u>Client:</u>
4/12/11 Case	<i>Datel Holdings Ltd. And Datel Design & Development, Inc. v. <u>Microsoft Corporation</u></i>
Project:	United States District Court Northern District of California San Francisco Division – Case No. 09 - CV-05535 EDL Munger, Tolles & Olson LLP, San Francisco, CA
Status:	Deposed. Case settled prior to trial.

<u>Date:</u>	<u>Client:</u>
11/8/12 Case	<i>Ethicon Endo-Surgery, Inc. and Ethicon Endo-Surgery, LLC. v. <u>Covidien Inc. and Tyco Healthcare Group, LP</u></i>
Project:	United States District Court for the Southern District of Ohio Case No. 1:11-CV-871 DLA Piper, LLP, Philadelphia, PA
Status:	Deposed. Case is scheduled for trial.

FINDINGS AND OPINIONS REGARDING ALLEGED INFRINGEMENT OF THE '646 PATENT

A. **Background of Design Patent Infringement Law**

19. It is my understanding that once a design patent claim is properly construed, it “must be compared to the accused design to determine whether there is infringement.” *Egyptian Goddess, Inc. v. Swisa, Inc.*, 543 F.3d at 678, 680-81 (Fed. Cir. 2008).

i. **Claim Meaning and Scope**

20. It is my understanding that design patents are, by their nature, narrow in scope and protect only the novel, non-functional aspects of the ornamental design. *See OddzOn Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1405 (Fed. Cir. 1997); *Elmer v. ICC Fabricating, Inc.*, 67 F.3d 1571, 1577 (Fed. Cir. 1995); *In re Mann*, 861 F.2d 1581, 1582 (Fed. Cir. 1988). Design patents “have almost no scope. Further, the claim of the '646 patent, as in all design cases, “is limited to what is shown in the application drawings.” *In re Mann*, 861 F.2d at 1582; *Elmer*, 67 F.3d at 1577. The scope of patent protection is further limited if, as in this case, there are many prior designs similar to the patented design. *Egyptian Goddess*, 543 F.3d at 670.

21. It is also my understanding that design patents have no specification and only a single claim covering that which is shown in solid outline in the drawings (*i.e.*, everything shown in solid outline is material to the patented design). *In re Blum*, 374 F.2d 904, 907 (C.C.P.A. 1967). In construing a design patent claim, the claim scope is properly limited to its “overall ornamental visual impression” that it creates rather than the “broader general design concept.” *OddzOn*, 122 F.3d at 1405; *see also Arminak and Assocs., Inc. v. Saint-Gobain Calmar, Inc.*, 501 F.3d 1314, 1321 (Fed. Cir. 2007).

22. For the infringement analysis, it is my understanding that the '646 patent drawings themselves are the best description of what is claimed. *Egyptian Goddess*, 543 F.3d at 679. I am informed that the Federal Circuit has cautioned against providing detailed verbal descriptions of design patent claims, but has not banned the practice of providing verbal descriptions completely. *Id.* at 680. The Court has confirmed that it is important for a district court conducting claim interpretation to distinguish between the features of the claimed design that are ornamental and those that are functional. *Id.* (citing *OddzOn*, 122 F.3d at 1405). The functional aspect of any element or feature of the '646 patent must be factored out to determine if there is infringement. *Richardson v. Stanley Works, Inc.*, 597 F.3d 1288, 1295 (Fed. Cir. 2010).

23. It is my understanding that the Federal Circuit has also recognized that a district court may wish to describe certain features of the disputed design and the prior art to explain its

own analysis. *Egyptian Goddess*, 543 F.3d at 608. Thus, this Court has discretion to offer a detailed verbal description of the '646 patent design, but it may instead rely on the actual illustrations set out in the patent instead. Whatever way the Court chooses to construe the '646 patent design in my opinion leads to the same conclusion that the Spinning Impact Extensions do not infringe.

ii. The Ordinary Observer—Substantial Similarity Test

24. It is also my understanding that the sole test for determining design patent infringement is the “ordinary observer” test. *Egyptian Goddess*, 543 F.3d at 678. Two designs are substantially similar if the ordinary observer, familiar with the prior art designs and giving such attention as a purchaser usually gives, would be deceived into believing the accused product is the same as the patented design. *Id.* at 672, 677, 681; *Richardson*, 597 F.3d at 1295; *International Seaway Trading Corp. v. Walgreens Corp.*, 589 F.3d 1233, 1239-40 (Fed. Cir. 2009). The hypothetical ordinary observer is the purchaser of the product accused to infringe. *See Goodyear Tire & Rubber Co. v. Hercules Tire & Rubber Co.*, 162 F.3d 1113, 1117 (Fed. Cir. 1998).

25. All the asserted patent’s drawing figures must be considered in the determination of infringement. *Keystone Retaining Wall Sys., Inc. v. Westrock, Inc.*, 997 F.2d 1444, 1450 (Fed. Cir. 1993); *Contessa Food Prods., Inc. v. Conagra, Inc.*, 282 F.3d 1370, 1378 (Fed. Cir. 2002). Under the ordinary observer test, individual features are first analyzed in order to determine whether the patented design, accused product, and/or the prior art have the same overall visual effect. *International Seaway*, 589 F.3d at 1240. After completing side-by-side comparison of the design’s “focal points,” the courts then consider the overall visual effect given by the claimed design. *Crocs, Inc. v. International Trade Comm’n*, 598 F.3d 1294, 1303, 1306 (Fed. Cir. 2010).

26. It is also my understanding that the ordinary observer “must be deceived by the features common to the claimed and accused designs that are ornamental, not functional.” *Unidynamics Corp. v. Automatic Prods. Int’l, Ltd.*, 157 F.3d 1311, 1323 (Fed. Cir. 1998);

Egyptian Goddess, 543 F.3d at 680. Further, the ordinary observer must “view the differences between the patented design and the accused product in the context of the prior art” such that “the attention of the hypothetical ordinary observer will be drawn to those aspects of the claimed design that differ from the prior art.” *Egyptian Goddess*, 543 F.3d at 676. The infringement determination therefore is not made in a vacuum but in light of the prior art. This is necessary to prevent prior art designs and designs substantially similar to the prior art from being captured as infringements. *Id.* at 678.

27. Further, according to the Federal Circuit, once the prior art is considered, the hypothetical ordinary observer becomes more capable of distinguishing between the patented design and the accused product. When the differences between the claimed and accused designs are viewed in light of the prior art, the attention of the hypothetical ordinary observer will be drawn to those aspects of the claimed design that differ from the prior art. And when the claimed design is close to the prior art designs, small differences between the accused design and the claimed design are likely to be important to the eye of the hypothetical ordinary observer. *Egyptian Goddess*, 543 F.3d at 676.

28. I also understand that, regardless of the context of the prior art, the Federal Circuit, in *Egyptian Goddess*, recognized that “[i]n some instances, the claimed design and the accused design will be *sufficiently distinct* that it will be clear without more that the patentee has not met its burden of proving the two designs would be ‘substantially the same’ to the ordinary observer, as required[.]” 543 F.3d at 678 (emphasis added). Thus, as a threshold matter, a determination of non-infringement can be made without resort to considering the prior art if the appearance of the accused product is not substantially the same as the patented design.

iii. Design Patent Infringement Requires Deceptive Similarity

29. It is my understanding that the test for infringement requires that an ordinary observer be “deceived” into believing the accused design is the same as the patented design

“inducing him to purchase one supposing it to be the other.” *Egyptian Goddess*, 543 F.3d at 681, 683 (citing *Gorham Co. v. White*, 81 U.S. 511, 528, 20 L.Ed. 731 (1871)).

B. Opinions

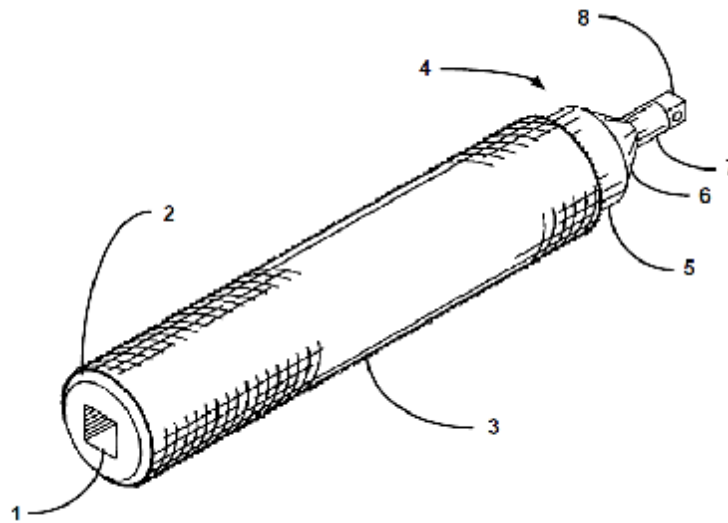
30. Based upon my understanding of the pertinent law, it is my opinion that the '646 patent is not infringed by the accused Spinning Impact Extension.

1. The Ordinary Observer.

31. In my opinion, the ordinary observer/purchaser of the tool handle in the '646 patent would include corporate customers such as auto parts stores who purchase, distribute and resell products of this type, as well as do-it yourself retail customers including mechanics, handy men, and persons employed to do, or hobbyists who do, work using products of this type. Such an ordinary observer would be familiar with ratchets and sockets, already have a socket wrench set, and be purchasing this product as a specialized accessory for a particular application. The ordinary purchaser would pay as much attention as one would typically use in deciding to purchase such a tool handle product.

2. The '646 Patent Claim.

32. The '646 patent claims “The ornamental design for a tool handle, as shown and described.” The '646 patent has seven figures, encompassing a single embodiment. In forming my opinions, I have considered all seven '646 patent figures in their entirety. Figure 1 of the '646 patent is displayed below with annotations for ease of discussion.



33. The '646 patent, as shown above, discloses a unitary tool handle for turning sockets and for use with a ratchet, or other hand tool. The tool handle has a large diameter main cylindrical body (3) and a smaller diameter extension housing (4). The main cylindrical body (3) has a blunt end with a female square drive (1) on the left end and the extension housing (4) on the right end. The main cylindrical body (3) is knurled along its entire length and includes a chamfered edge (2) on its left end. The extension housing (4) includes a reduced diameter cylindrical portion (5), a tapered portion (6), and a short extension (7) with a male square drive (8). The tapered portion (6) reduces in diameter from the diameter of the reduced diameter cylindrical portion (5) on the left end to the diameter of the short extension (7) on the right end. The extension housing (4) is unknurled.

34. The female square drive (1) and male square drive (8) are clearly functional. These features (1, 8) serve no ornamental purpose and exist only to connect the tool to standard square drive socket drivers (female square drive (1)) to the left end of the tool and sockets or extensions on the right end (male square drive (8)). In addition, the short extension (7) is only ornamental in that it could be a different length. Its diameter, however, is likely set by the size of the particular male square drive (8), and thus, is largely functional. As a result, *at least* the female square drive (1) and the male square drive (8) should be removed from consideration.

See OddzOn Prods., Inc. v. Just Toys, Inc., 122 F.3d 1396, 1405 (Fed. Cir. 1997); *Elmer v. ICC Fabricating, Inc.*, 67 F.3d 1571, 1577 (Fed. Cir. 1995); *In re Mann*, 861 F.2d 1581, 1582 (Fed. Cir. 1988). It is likely that the short extension (7) should also be excluded from the analysis. *Id.*

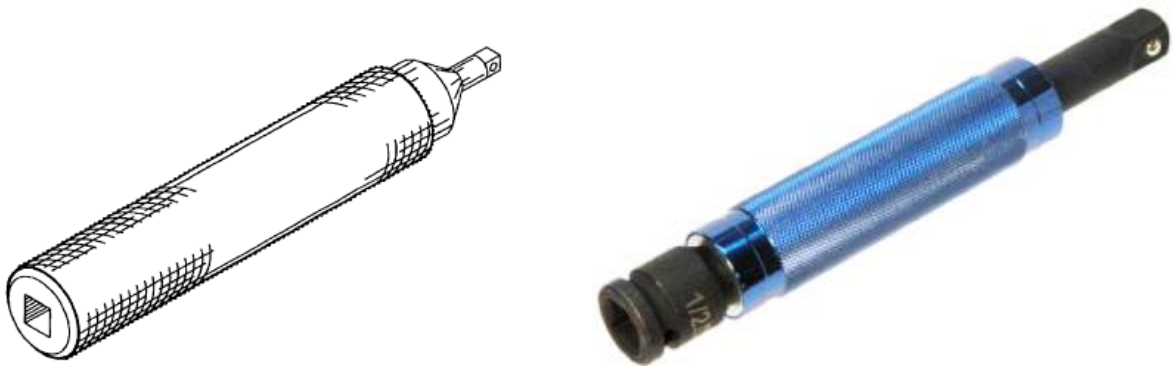
35. Like the short extension (7), the main cylindrical body (3) is ornamental only in that it could be a different length or diameter, for example, or could be partially knurled, rather than knurled along its entire length.

36. While it may have some functional purpose, the beveled edge (2) is largely ornamental. Similarly, the extension housing (4) as a whole, including the reduced diameter portion (5) and the taper (6) are largely ornamental. These elements (4, 5, 6) could be knurled or could be a different diameter, for example. In addition, like the accused Spinning Impact Extension, the right end of the tool could be blunt instead of having a taper (6).

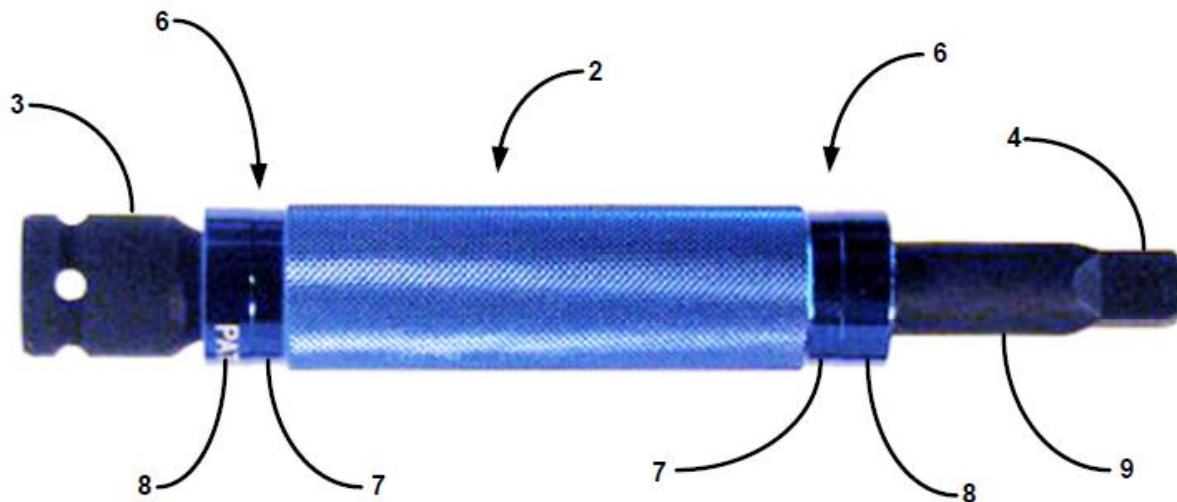
3. The Spinning Impact Extension and the '646 patent are “Sufficiently Distinct” Without More.

37. Regardless of the prior art, as noted, the Federal Circuit, in *Egyptian Goddess*, recognized that “[i]n some instances, the claimed design and the accused design will be sufficiently distinct that it will be clear without more that the patentee has not met its burden of proving the two designs would be ‘substantially the same’ to the ordinary observer, as required[.]” 543 F.3d at 678.

38. I have considered all seven drawings of the '646 patent and the overall visual effect created by the claimed design as well as the three sizes of Spinning Impact Extensions (3/8,” 1/2”, and 3/4”) in their entirety. *See Exhibit 8*, attached hereto, which includes true and accurate composite photographs and overlay comparisons that I prepared. In my opinion, the accused Spinning Impact Extension and the '646 patent design, shown in one representative side-by-side comparison of Figure 1 of the '646 patent and the accused design below, are sufficiently distinct overall to conclude there is no infringement without more.

**FIG. 1 – '646 patent****Spinning Impact Extension (1/2")**

39. As shown below, the accused Spinning Impact Extension simply comprises an impact-type extension (1) with a rotating handle (2) mounted thereto. The impact extension (1) is a standard extension and comprises a female square drive (3) protruding from the left end of the hand and a portion (9) with a male square drive (4) protruding from the right end. The handle (2) is mounted onto the extension using two roller bearings and a c-clip. The handle (2) includes a knurled portion (5) and unknurled portions (6) at either end. Each unknurled portion (6) further comprises a reduced diameter portion (7) and a portion (8) that is substantially the same diameter as the knurled portion (5), thus forming a slight channel (7) at either end of the handle (2).



40. The accused Spinning Impact Extension's handle (2), shown above, is a simple cylinder and thus lacks all of the significant elements found in the '646 patent. In particular:

- Only a portion (5) of the Spinning Impact Extension handle (2) is knurled. The remainder (6) of the handle (2) is unknurled.
- The left end of the handle (2) does not house a female square drive. Rather, the left end contains a bearing from which the female end (3) of the impact extension (9) protrudes. As a result, the left end of the handle (2) is not the left end of the tool.
- The left end of the handle (2) is not beveled.
- The handle (2) is not knurled along its entire length. Instead, both the left and the right ends (6) of the handle (2) are prominently and distinctly unknurled.
- The right end of the handle includes an unknurled portion (6) that has both a reduced diameter portion (7) and a portion (8) that has substantially the same diameter as the knurled portion (5). The reduced diameter portion (7), thus, creates a slight channel on the handle (2) (this features is found on both ends of the handle (2)).
- The right end (8) of the handle (2) does not taper down to the diameter of the extension (9), but rather is blunt.

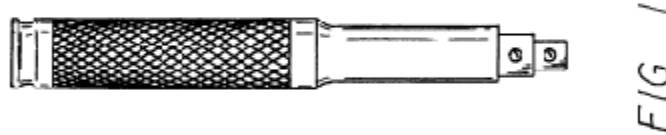
41. The only features the '646 patent design and Spinning Impact Extension have in common is they have a generally cylindrical main body, with knurling on some portion thereof, and male and female square drives (which are purely functional). Thus, after completing a side-by-side comparison of the '646 patent claim's ornamental "focal points" with the accused Spinning Impact Extension, the two designs do not portray the same overall visual effect. *Crocs*, 598 F.3d at 1303, 1306.

42. In my opinion, the ordinary observer, whether familiar with prior art designs or not, would not be deceived into believing that the Spinning Impact Extension is the same as the design in the '646 patent. *Egyptian Goddess*, 543 F.3d at 670,672.

4. In light of the Prior Art, the Spinning Impact Extension and the '646 patent are even more distinct.

43. I have also reviewed the prior art in light of the '646 patent claim to identify “those aspects of the claimed design that differ[] from the prior art.” *Egyptian Goddess*, 543 F.3d at 676.

44. U.S. Des. Patent No. D475,589 (“the '589 patent”), shown in Figure 1 below, was cited by the Examiner during the prosecution of the '646 patent.

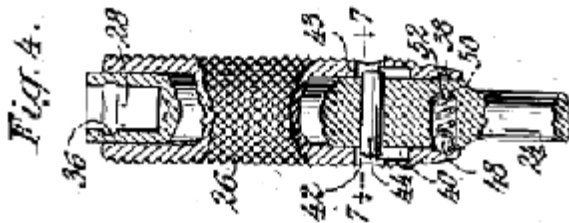


The '589 patent clearly discloses a cylindrical main body on the left end with knurling over a portion of the handle. The '589 patent also discloses an area on both ends of the handle which are unknurled. The '589 patent also discloses an extension with multiple male square drives on the right end. The handle disclosed in the '589 patent tapers slightly to the extension section.

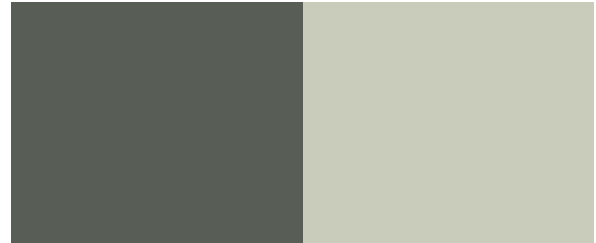
45. Based on a comparison of the '646 patent and the '589 patent, and bearing in mind that a patent should be construed in light of the prior art in a manner that renders it valid, if possible, the '646 patent cannot have been granted based on the fact that it discloses a generally cylindrical body, with knurling, tapering into an extension. In addition, as both the male and female square drive are purely functional, these have no bearing on patentability for a design patent. Based on the features found in the '589 patent alone, therefore, the “focal points” of the '646 patent must lie elsewhere. *Crocs*, 598 F.3d at 1303, 1306.

46. Also, the knurled cylindrical main body disclosed in the '589 patent has an unknurled section at either end. This cited prior art design is more similar to that of the accused Spinning Impact Extension than that of the '646 patent claimed design.

47. The uncited prior art USPN 2,071,543 to Kress (“the '543 patent”) and its commercial embodiment, the uncited prior art Williams M-110, shown below, disclose almost all of the features disclosed in the '646 patent.



'543 patent – Fig. 4

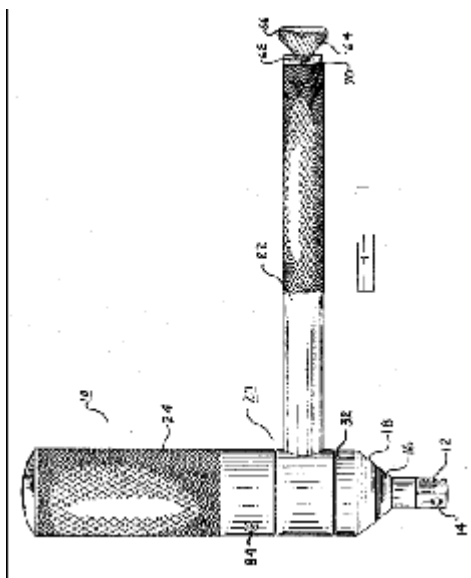


Williams M-110

The '543 patent, for example, discloses a tool handle with a knurled main cylindrical body. The '543 patent also discloses an unknurled extension housing with a reduced diameter portion on the right end of the main cylindrical body that tapers to an extension of the right end of the tool. The '543 patent discloses a male square drive on the right end and a female square drive on the left end. In addition, the left end of the tool disclosed in the '543 patent appears to be beveled.

48. Based on a comparison of the '646 patent and the uncited '543 patent, therefore, the '646 patent cannot have been granted based on the fact that it discloses a generally cylindrical body, with knurling, tapering into an extension. In addition, the '646 patent cannot have been granted based on the fact that it discloses a generally cylindrical body with a beveled left end and an unknurled, reduced diameter portion on the right end. And, while the '543 patent discloses both a male and female square drive, these are purely functional and have no bearing on patentability for a design patent. Based on the features found in the '543 patent alone, therefore, the “focal points” of the '646 patent must lie elsewhere. *Crocs*, 598 F.3d at 1303, 1306.

49. The uncited prior art USPN 3,650,165 to Wolfe (“the '165 patent”), shown below, discloses a tool handle with a knurled main cylindrical body.



50. The '165 patent also discloses an unknurled portion on the right end of the main cylindrical body that tapers to an extension of the right end of the tool. The '165 patent discloses a male square drive on the right end. In addition, the right end of the tool discloses a short extension.

51. In light of *at least* these references,¹ the '646 patent cannot be broadly construed. As displayed in Table 1 below, all of the features in the '646 patent can be found in the prior art.

'646 Patent Feature	'589 Patent	'543 Patent	'165 Patent
b. a generally cylindrical main body including:	X	X	X
i. a blunt left end with a female square drive	X		
ii. an extension housing on the right end	X	X	X
iii. knurling along its entire length		X	
iv. a chamfered edge on its left end.		X	
c. the extension housing includes:		X	X
i. a reduced diameter cylindrical portion,		X	
ii. a tapered portion and	X	X	X
iii. a short extension with a male square drive.			X
iv. The extension housing is unknurled.		X	X

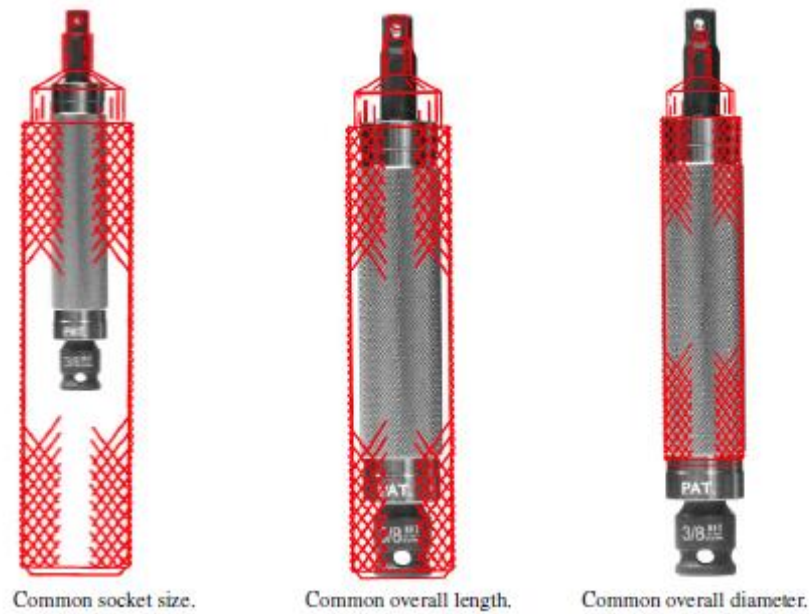
¹ There are additional prior art references that disclose features similar to '646 patent and the prior art cited herein as set forth in my Declaration and Expert Report Regarding Invalidity of the '646 patent dated 11-25-2013.

Table 1: Comparison of Prior Art

52. As a result, patentability can only possibly have resulted from either (1) the inclusion of all significant “focal points” in one design and/or (2) the specific size and proportions of the design in the '646 patent. As discussed below, however, the Spinning Impact Extension does not contain all of these critical focal points and does not have the same, or even similar, size and proportions.

53. The Spinning Impact Extension is missing many of the key ornamental focal points found in the '646 patent. Among other '646 patent design features that the Spinning Impact Extension lacks is a fully knurled main cylindrical body. The Spinning Impact Extension instead has a prominent and distinctive ornamental region on each end of the main housing that is unknurled and contains a distinctive channel. The Spinning Impact Extension also lacks a tapered extension housing on the right end, and instead has a blunt end with no taper. The Spinning Impact Extension is further missing a beveled left end, and instead is blunt as on the right end. In addition, the Spinning Impact Extension does not include a blunt left end with a female square drive, but rather has an extension protruding therefrom.

54. No version of the Spinning Impact Extension (the 3/8” drive, 1/2” drive, or 3/4” drive versions) have the same dimensions or proportions as the '646 patent. Because the '646 patent, or any design patent, does not purport to encompass a particular dimensional limitation, however, I have prepared the figures below, that compare the Spinning Impact Extension to the '646 patent design by comparing a given dimension. In addition, I have photographed and prepared similar comparison figures for all of the perspectives shown in the '646 Patent and for each size of the accused Spinning Impact Extension, as well as what Plaintiff refers to as the Pa-Zee Grip commercial embodiment of his '646 patent designated “3/8 KB USA” (each of which is attached hereto as composite **Exhibit 8**). The photos and silhouettes of the Defendants’ Spinning Impact Extension and Plaintiff’s Pa-Zee Grip are accurately scaled when compared to the figures of the '646 patent.



55. The figure shown on the left, above, compares common socket size, the middle figure compares common overall length, and the right figure compares common diameter of the main cylindrical housing of Defendants' Spinning Impact Extension compared to the '646 patent design.

56. As shown, the comparisons highlight a number of obvious differences between the Spinning Impact Extension and the '646 patent design. Using a common socket size (*e.g.*, 3/8" drive), for example, the design of the '646 patent is approximately twice the length and four times the volume of the Spinning Impact Extension. Comparing by common overall length accentuates the fact that the Spinning Impact Extension does not have a tapered extension housing, for example, is much smaller in overall volume and in diameter, and that it comprises an extension with a cylindrical handle (*i.e.*, as opposed to being a cylindrical tool in and of itself). Comparing a common overall diameter shows that the design in the '646 patent is proportionally approximately 3/4 the overall length of the Spinning Impact Extension. Thus, regardless of the metric, the Spinning Impact Extension does not resemble the design of the '646 patent. In contrast, Plaintiff's '646 patent claim design reads on his "3/8 KB USA" Pa-Zee Grip.

57. In addition to the prior art used above to define the boundaries of the '646 patent, it is my understanding that prior art can also be used to indicate what cannot infringe. *Egyptian Goddess*, 543 F.3d at 678.

58. The uncited prior art Snap-On® SG-6 (“the SG-6”), shown below, which has been commercially available since at least 1930,² discloses a design very similar to the Spinning Impact Extension.



59. As shown above, the prior art SG-6, like the Spinning Impact Extension, discloses what is essentially an extension with a rotating collar. The SG-6 includes a knurled main cylindrical body with a tapered right end. The male end of the extension protrudes from the tapered right end and ends with a male square drive. The left end of the extension protrudes from the left end of the main cylindrical body and includes a female square drive. Given the similarities between the prior art SG-6 and the Spinning Impact Extension, and the fact that the SG-6 has been commercially available for nearly 75 years, it is difficult to imagine how the Spinning Impact Extension could infringe any valid '646 patent, in my opinion. If the design of the '646 patent is interpreted broadly enough to cover the Spinning Impact Extension, then the '646 patent claim would ensnare the prior art.

² The "0" date code indicates 1930. "Snap-On – Bluepoint Tools", Alloy Artifacts, *available at* <http://home.comcast.net/~alloy-artifacts/snapon-bluepoint-tools-p2.html>

CONCLUSION

60. For all the reasons stated above, the accused Spinning Impact Extension does not infringe the '646 patent. The Spinning Impact Extension does not have a substantially similar design to that disclosed on the '646 patent. The two designs do not have the same overall visual impression and are, in fact, sufficiently distinct to obviate the need to review the prior art. Regardless, a review of the prior art reveals a '646 patent design that is invalid or extremely narrow. The Spinning Impact Extension does not include many key “focal points” found in the design of the '646 patent and thus, does not infringe. Additional prior art references, such as the SG-6, indicate that the Spinning Impact Extension cannot infringe.

I declare, under penalty of perjury under the laws of the United States, pursuant to 28 U.S.C. § 1746, that the foregoing is true and correct.

Executed this 23th day of December, 2013 in Roanoke, Virginia.

A handwritten signature in blue ink, appearing to read "R.B. Kemnitzer", with a stylized flourish at the end.

Ronald B. Kemnitzer, FIDSA

An Index to Exhibits

1. Kemnitzer's Curriculum Vitae.
2. Description of Industrial Design (ID) from "The Industrial Designers Society of America" (IDSA).
3. U.S. Design Patent No. D500,646 S (to Butler).
4. U.S. Design Patent No. D475,589 (to Wilkinson).
5. U.S. Patent No. 2,071,543 (to Kress).
6. Williams M-110 Convertible Handle and Extension (a commercial embodiment of U.S. Pat. No. 2,071,543 (to Kress)) as shown at <http://home.comcast.net/~alloy-artifacts/williams-supercompany-p.4.html>.
7. U.S. Patent No. 3,650,165 (to Wolfe)
8. Photographs of Defendants' Spinning Impact Extension and Plaintiff's Pa-Zee Grip Tool Handle in overlay comparison to '646 patent figures.
9. Snap-Snap-On[®] SG-6 as shown at "Snap-On – Bluepoint Tools", Alloy Artifacts, *available at* <http://home.comcast.net/~alloy-artifacts/snapon-bluepoint-tools-p2.html>.

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

KENNETH BUTLER, SR. an individual.

Plaintiff,

vs.

BALKAMP INC., et al.

Defendants.

)
) CIVIL ACTION NO:
) No. 1:12-cv-01716-SEB-DML
)

) **DECLARATION AND EXPERT**
) **REPORT OF RONALD B.**
) **KEMNITZER REGARDING NON-**
) **INFRINGEMENT OF U.S. DESIGN**
) **PATENT NO. D500,646 S**
)

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing *DECLARATION AND EXPERT REPORT OF RONALD B. KEMNITZER REGARDING NON-INFRINGEMENT OF U.S. DESIGN PATENT NO. D,500,646, DATED DECEMBER 23, 2013* was deposited in the First Class United States mail this 23rd day of December, 2013 addressed to:

Joseph J. Zito, Esq.
DNL ZITO
1250 Connecticut Avenue, NW
Suite 200
Washington, DC 20036

Benjamin C. Deming, Esq.
DNL ZITO
355 S Grand, Suite 2450
Los Angeles, CA 90071

This 23rd day of December, 2013.

/s/ John M. Bowler
John M. Bowler, Esq.

EXHIBIT 1

RONALD B. KEMNITZER FIDSA

School of Architecture + Design
Virginia Polytechnic Institute and State University
201 Cowgill Hall (0205)
Blacksburg, VA 24061 USA
Telephone: 540-231-1222
Fax: 540-231-9938
rkemnitz@vt.edu

UNIVERSITY EDUCATION:

Northern Illinois University. DeKalb, IL. MA in Design, 1973. Graduation with Honors.
Loyola College. Baltimore, Maryland. Graduate School of Business. Management Program.
University of Cincinnati. Cincinnati, Ohio. BS in Industrial Design, 1967.

TEACHING EXPERIENCE:

Virginia Polytechnic Institute and State University (Virginia Tech). Blacksburg, VA. 2004- present.
Professor of Industrial Design. Chair, Industrial Design Program, 2008-2011.
Carnegie Mellon University. Pittsburgh, Pennsylvania. Nierenberg Distinguished Visiting
Professor of Design, 2003-4.
University of Kansas. Lawrence, Kansas. On Leave-of-Absence 2003-2004. Professor 2002 - 2004.
Associate Professor of Design (tenured) 1997 - 2002. Assistant Professor of Design
1994 - 97.
Part-time Lecturer 1992-94. Teaching responsibilities in: Visual Presentation, Portfolio,
Design II, Design III, Design IV, Thesis I and Thesis II, and Special Problems (Computers In
Design, Exhibition Design). Faculty Advisor to Student Chapter of IDSA.
National Taipei Institute of Technology. Taipei, Republic of China. December 1990. One of two US
Designer/Educators selected to organize and conduct a two-week professional
development workshop for furniture designers in the Republic of China.
Kansas City Art Institute. Kansas City, Missouri. Associate Professor of Design (tenured) 1981- 89.
Co- Chair of the Design Department 1987-89. Teaching responsibilities in all levels of
Industrial Design, Exhibition Design, Package Design, Design Illustration, and Computers In
Design. Co-Chair of the Accreditation Committee 1988-89. Co-Chair of the Long Range
Planning Committee 1988-89. Co-coordinator of the Design Internship Program.
University of Cincinnati. Cincinnati, Ohio. Summer Quarter 1982. Visiting Associate Professor of
Industrial Design. Teaching responsibilities in 4th and 5th year Industrial Design Studio and
Manufacturing Materials and Processes.
Michigan State University. East Lansing, Michigan. Assistant Professor 1973-78. Associate Professor
(tenured) 1978-81. Head of the Industrial Design Program 1977-81. Teaching
responsibilities in Basic Design, Design Communication, Industrial Design, Photography.
Established and administered the Design Internship Program.
Northern Illinois University. DeKalb, Illinois. Graduate Teaching Assistant 1972-73. Teaching
responsibilities in Two and Three Dimensional Design and Basic Freehand Drawing.

PROFESSIONAL EXPERIENCE:

Design Management Center Villa Tosca, USA. 2001 – Present. President. An affiliate office of DMC Villa
Tosca in Milan, Italy. A consulting organization dedicated to the development of design
methodologies for a changing world and design research tools for multinational corporations.
Kemnitzer Design, Inc., Kansas City, MO. 1985-2003. President. A small design consulting firm
specializing in industrial design and visual merchandising. Clients included:
Ambassador Cards, B&E Aerospace, Cramer Sports Products, Fixtures Furniture Company,
Select Brands Appliances, Lee Apparel Company, Bushnell Sports Optics, Medi-Flex
Hospital Products, Hallmark Cards, Paoli Furniture Company, Script-Pro LLC, Virco
Manufacturing Company, Sprint PCS, World2Toys, and numerous others.

Midwest Design Inc., Kansas City, Missouri. 1981-1985. Vice-President. A design consulting firm with activity in product design, package design, exhibition design, graphic design, and color development. Clients included Butler Manufacturing Company, Consolidated Aluminum Company, Locke Stove Company, Kansas City Southern Industries, McGee Radio Company.

Sunbeam Appliance Company. Oak Brook, Illinois. 1970-72. Senior Designer. Primary responsibility in product design, package design and graphic design.

Black & Decker Manufacturing Company. Towson, Maryland. 1968-70. Staff Designer with responsibility in product design and package design.

Pentes Design Inc. Charlotte, North Carolina. 1967-68. Staff Designer with responsibility in package graphic, exhibition and interior design and audio-visual production.

PROFESSIONAL MEMBERSHIPS:

Industrial Designers Society of America.

National participation:

Elected to The Academy of Fellows, 2004.

Chairman of the Board, 2007-2009.

President, Chief Elected Officer. Board of Directors 2005-2007.

Secretary/Treasurer, member of Planning Committee, Executive Committee and Board of Directors. January, 2001 - 2003.

Chair, Lifelong Learning Committee. 2000 - 2003.

Education Chair, member of Planning Committee and Board of Directors. January 1999 - 2001.

Initiated collaborative curriculum relationship with the International Technology Education Association. Initiated collaborative development of 'Distance Learning Masters' with Arizona State University. Negotiated annually renewable software grants for all 54 accredited Industrial Design programs with Ashlar Software Company and think3 Company valued at approximately \$24 million dollars for the first year.

District Participation:

Midwest District Vice President. Elected to two-year term 1997-99.

Chair and organizer of the 1996, 97 and 98 Midwest District Conferences.

Chair and organizer of the IDSA National Education Conference. 1999, 2000.

Member of Executive Committee and Board of Directors January 1997 - 1999.

Chairman of the 1994 Nominations Committee.

Member of the Board of Directors. 1982-84, 1984-86. 1988- 2003.

Chairman of the Education Group for the 1985 Worldesign Conference of the Council of Societies of Industrial Design (ICSID). Washington, DC.

Education Committee 1980-83. (Chairperson 1982-83).

Accreditation Committee of the Design Foundation 1982-84. This committee developed the accreditation standards for industrial design programs that have been adopted by the National Association of Schools of Art and Design.

Member of the Planning Committee for the Chicago '83 National Conference.

Local participation:

Founder of the Kansas City Chapter. 1988.

Chairperson of the Kansas City Chapter. 1988-1992. In the first year of the chapter, a successful international design competition titled 'Toast To The Future' was developed with the sponsorship of the Black & Decker Mfg. Co. The chapter was recognized for having the highest membership growth of all chapters for 1990 (24% increase).

RESEARCH, GRANTS & COMPETITONS:

Awarded National Science Foundation Grant. One of six Co-Principal Investigators for a \$396,000 grant: "Building New Engineering Educational Theory and Practice for Interdisciplinary Pervasive Computing Design". June, 2009 – June, 2013.

Member of Interdisciplinary faculty research team selected by Virginia Tech as one of three groups in the inaugural 'Interdisciplinary Research Team Fellowships', an initiative to prepare teams of experienced researchers for success in the preparation and management of large, interdisciplinary, and/or multi-institutional awards'. 2007-2009.

Procter and Gamble Student Design Collaborative. Member of interdisciplinary student/faculty group that was one of four academic institutions selected for this semester-long design collaborative on design initiatives for the aging consumer. 2006.

'USA Design Trends' research project. A proprietary research project that samples images published in selected periodicals and identifies current visual trends in the areas of Architecture, Interior Design, and Industrial Design. The compilation of this research in limited edition book form was subscribed to by Sony Corp., Panasonic, Toshiba, JVC Japan, Sharp Electronics Japan, NEC Japan, Mitsubishi Japan, and Shonan Design Japan.

'Washing The Time' Competition Workshop. Organized by DMC Villa Tosca Design Management Center, Milan, Italy. June-December, 2000. A competition workshop sponsored by Maytag International to design a new laundry washing machine for the European market. Only US designer selected among 6 participants. Awarded First Place.

'Purity & Cleaners 2' Design Competition Workshop. Organized by DMC Villa Tosca Design Management Center, Milan, Italy. Sponsored by Panasonic USA to design a new vacuum cleaner for the North American retail market. June, 1999 - June, 2000. Only US designer invited. Awarded 2nd Place.

Design For Rescue & Relief Program. 'Lifting Device For Disaster Rescue Efforts'. Sponsored by the International Council of Societies of Industrial Design, the International Red Cross, and the United Nations Disaster Relief Organization. 1979.

MSU All-University Research Initiation Grant. 'Playgrounds For Handicapped Children'. 1977.

Summer Assignment to the MSU Humanities Center for the development of play materials for handicapped children. 1976.

PUBLICATIONS (Books, Articles, Media):

"The Mathematics of Beauty". Co-authored with Augusto Grillo, Director of DMC Villa Tosca. Milan, Italy. Invited article for 'Innovation' magazine published by the Industrial Designers Society of America. Winter, 2001 issue.

"Animation - A Playful Reality". Published in 'Aedo-Ba' magazine. Fall, 2001 issue.

"A Most Awesome Sneak Peak". Published in 'Innovation' magazine. Spring, 2000 issue.

"Numbers and Aesthetics... Beauty and its Mathematical Roots". A multi-media CD produced by DMC Villa Tosca, Milan, Italy. July, 2001.

"A Brief History of American Telephone Design". Published in 'Aedo-Ba' magazine. Milan, Italy. Spring, 2000 issue.

Rendering With Markers. Author. Published by Watson-Guption Publications, Inc. 1983.

Videos: "Marker Rendering Techniques" and "Advanced Marker Rendering Techniques". Produced and distributed by the Industrial Designers Society of America. 1985-90.

ACADEMIC PAPERS:

"An Interdisciplinary Design Course for Pervasive Computing". Juried journal article co-authored with Tom Martin, Eloise Coupey, Lisa McNair, Ed Dorsa, Jason Forsyth, and Sophie Kim. Published in IEEE Pervasive Computing. Volume 11, Number 1, January-March 2012.

"Enhancing Biomedical Design Through Design Thinking". Juried paper accepted for presentation and publication by the Engineering in Medicine and Biology Conference. Minneapolis, MN. September, 2009.

"Cultural Aspects of Design Thinking". Juried paper presented at and published by the 2009 IDSA National Education Symposium. September, 2009. Miami, FL.

"Things You Probably Didn't Think Of... Tips for creating a successful interdisciplinary product development program". Juried paper presented at and published by the 2008 IDSA National Education Symposium. September, 2008. Phoenix, AZ.

- "Cultural Modifiers of Visual Aesthetics". Juried paper accepted for presentation and publication by the 2004 National Education Conference of the Industrial Designers Society of America. Pasadena, CA. September, 2004.
- "Are You Talking to Me? Teaching User-Centered Design". Juried paper accepted for presentation and publication by the 2003 National Education Conference of the Industrial Designers Society of America. New York, New York. August, 2003.
- Designing Culturally Enriched Products for International Markets", co-authored with Augusto Grillo, Director of DMC Villa Tosca, Milan, Italy. Juried paper presented at 2002 National Education Conference of the Industrial Designers Society of America. San Jose, CA. July, 2002. Selected as one of two 'Outstanding Papers' to be published in 'Innovation' magazine. Winter, 2002 issue.
- "Numbers and Aesthetics... Beauty and its' Mathematical Roots", co-authored with Augusto Grillo, Director of DMC Villa Tosca, Milan, Italy. Juried paper presented at 2001 National Education Conference of the Industrial Designers Society of America. Boston, Mass. August, 2001.
- "User Friendly Design Criteria for Seating, Storage and Office Systems". Juried paper presented at the World Workplace' Symposium. Dallas, Texas September, 1997.
- "Does Design Methodology Support 'Hunters' or 'Gatherers'?" Juried paper presented at National Education Conference sponsored by the Industrial Designers Society of America. Santa Fe, NM. 1995.
- "The Product Design Process". Juried paper presented at the Design Michigan Conference on Expanding Sales Through Product Innovation. Bloomfield Hills, Michigan. May 1981.
- "Designing Toys For Children Who Use Prosthetic Devices". Juried paper presented at the XI Congress International Council of Societies of Industrial Design. Mexico City, Mexico. 1979.
- "Selecting Toys For Handicapped Children". Juried paper presented at the International Convention, Council For Exceptional Children. Dallas, Texas. April 1979.
- "Design For Everyone - A Human Factors Model For Design Education". A juried paper presented at X Congress International Council of Societies of Industrial Design. Dublin, Ireland. 1977.
- "Toys As Learning Materials and Sensory Enhancers". Juried paper presented at 1976 Conference on Systems and Devices for the Disabled. Tufts University-New England Medical Center. Boston, Massachusetts.
- "Design Of Toys For Hearing Impaired Children". Juried paper presented at IX Congress International Council of Societies of Industrial Design. Moscow, USSR. October 1975.

PRESENTATIONS, SEMINARS, WORKSHOPS, JURIES:

- Invited Primary External Advisor for the Hong Kong Polytechnic University, Swire School of Design. 3-year term from 2009 through 2012.
- Invited Jury Chair. 2011 Brunell International Award Competition for Rail Transportation Design. Washington, DC. June-October, 2011.
- Invited Speaker. American Public Transportation Association National Rail Conference, Topic: "Visioning the Next Generation of Intercity Rail Travel". Chicago, IL. June, 2009.
- Invited speaker: "Focus Mutfak & Banyo Fair". Topic: "International Design Trends in Home Appliances". Istanbul, Turkey. May, 2009.
- Invited judge. 'Design Turkey' first National Industrial Design Competition. Istanbul, Turkey. October 19-20, 2008.
- Invited speaker. 'Design Turkey National Conference and Exhibition'. Istanbul, Turkey. October 21, 2008.
- Invited External Advisor for new curriculum design. Hong Kong Design Institute. 2007-2008.
- Invited participant: 'The Design Imperative' Symposium sponsored by the University of Cincinnati. Cincinnati, OH. March, 2006.
- Invited speaker: "Industrial Design Education in the USA" presented at 'Education Day' symposium sponsored by Hong Kong Polytechnic, Hong Kong, China. November 19, 2005.
- Invited speaker: "The Future Practice of Industrial Design" presented at the '2nd Latin American Conference of the International Council of Societies of Industrial Design' in Santiago, Chile in January, 2005.

Jury Co-coordinator: Microsoft/IDSA 'The Next PC' Design Competition. Seattle, WA. Oct., 2005.

Invited chairman of the jury. Marksman Design Award. Amsterdam, The Netherlands, April, 2004.

Invited judge. 11th Annual International Housewares Association Student Design Competition.
Chicago, IL. January, 2004.

Invited judge (1 of 3). Appliance (AM) Magazine's 17th Annual Excellence in Design (EID) Competition.
February, 2004.

Invited to present seminar/workshop on 'User-Centered Design Methodology'. Virginia Tech University.
September, 2003.

Invited participant in "Teaching Methods Forum Panel" at the 2003 National Education Conference of the
Industrial Designers Society of America. New York, New York.

Invited judge (1 of 3). Appliance (AM) Magazine's 16th Annual Excellence in Design (EID) Competition.
February, 2003.

"Evolution of Product: Designing Contract Furniture". Invited 'Executive in Residence' presentation.
College of Human Environmental Sciences & Department of Environmental Design.
University of Missouri. Columbia, MO. September, 2001.

"Part Design for Manufacture". Invited presentation. Society of Plastics Engineering. Kansas City, MO.
April, 2001.

Invited juror for first international Internet design competition 'Nomad Lamp'. Sponsored by
www.aedo-to.com June, 2001.

Invited participant in General Motors Student Sculpting Symposium. Warren, MI. Nov., 1999.

Invited participant in panel discussion at the 23rd Annual AUID Conference. October, 1999. The
University of Kansas. Lawrence, KS.

Official voting delegate of the Industrial Design Society of America at the 1999 Annual Conference
and Business Meeting of the National Association of Schools of Art & Design. October,
1999. Los Angeles, CA.

Group Discussion Leader on topic 'Technology In Education' at the 1999 Midwest District Conference
of IDSA. April, 1999. Madison, WI.

"Integration of Solid Modeling into Contemporary Industrial Design Practice". Alias World Tour of Solid
Modeling/Animation. St. Louis, MO. November, 1995.

Invited to speak at the Kansas City Art Institute on 'Industrial Design Communications'. Nov., 1995.

Panel discussion moderator. Midwest District Conference Industrial Designers Society of America.
Indianapolis, Indiana. 1995.

Group discussion moderator. National Education Conference of the Industrial Designers Society of
America. Dearborn, Michigan. 1994.

One of six industrial designers selected to serve as group discussion leaders on the transfer of
technology to consumer products at the 1994 National Conference of the Federal
Laboratories Consortium. Kansas City, Missouri April, 1994.

"The Design Process/Bola". A presentation on the design process used in the development of the Bola
chair. Presented to interior design groups throughout the US. 1988-92.

"Rendering Blue Prints". Lecture/Workshop. IDSA Annual Conference, August, 1987. Monterey, CA.

AWARDS, EXHIBITIONS, MEDIA:

Awarded 14 Design Patents and 4 Utility Patents from the United States Patent Office.

Named one of 25 educators by the Design and Future Council of *Design Intelligence* as 'most admired
and respected in the fields of interior design, interior architecture, architecture design,
architectural engineering, industrial design, and landscape architecture'. 2008, 2009, and
2011.

'Monsters of Design' Annual design competition co-sponsored by Kansas City AIA, AIGA and IDSA.
Award of Special Merit for design of a trade show exhibit for Lumen Center Italia.
August, 2002.

'Good Design' Award presented by the Chicago Athenaeum Museum of Architecture and Design for
the 'Kid's Console' produced by Hopkins Manufacturing Company. 2001

'Washing The Time' International Design Competition Workshop. Sponsored by Maytag International.
Organized by DMC Villa Tosca. Milan, Italy. June-December, 2000. First Place.

Featured as 'Designer of the Month' January, 2001 by www.aedo-to.com
Featured as 'Designer of the Week' December 3-9, 2000 by www.aedo-to.com
'Purity & Cleaners' International Design Competition Workshop. Sponsored by Panasonic USA.
Organized by DMC Villa Tosca. Milan, Italy. June, 1999 - June, 2000. Second Place.

Published in 'Design Management', Fall 1998 issue. Published in Milan, Italy. Article on personal design philosophy and examples of work
'Good Design' Award presented by the Chicago Athenaeum Museum of Architecture and Design for the Bushnell Litespeed 400 Laser Rangefinder. 1997.
QuBit' Digital Video Recorder designed for QuVIS, Inc. was named one of the 'Top Ten New Products' at the 1996 National Association of Broadcasters (NAB) Conference and Trade Show in Las Vegas, NV.
Bronze OMA Award presented by the Point Of Purchase Advertising Institute (POPAI) for the design of a retail merchandising system for Hallmark Cards, Inc. January, 1995.
Work published in Innovation - Award Winning Industrial Design, published by PBC International, 1995.
'Product of the Year' Award by 'Plant Engineering' Magazine for the design of the Rycom 8870 Cable Locator. February, 1994.
Bronze Award. IDEA Competition sponsored by the Industrial Designers Society of America and 'Business Week' Magazine for the design of the 'Pathfinder' Cable Locator. July, 1992.
Gold OMA Award presented by the Point Of Purchase Advertising Institute (POPAI) for the 'Best Retail Environment of the Year'. 'Seasons Plus' program for Ambassador Cards Division of Hallmark Cards, Inc. January, 1991.
Gold Award presented by Institute of Business Designers and Contract Magazine for design of the 'BOLA' chair for Fixtures Furniture Company. October, 1988.
Featured in a nationally distributed news segment produced by Newsweek Broadcasting, Inc. The segment 'Toys For Hearing Impaired Children' was broadcast on more than 120 stations. April 1980.
'Design Michigan' Exhibition. Two entries accepted. Cranbrook Academy of Art. Bloomfield Hills, MI. 1977.
'Design For Need' International Exhibition. Royal College of Art. London, England. 1976.
21st Annual Design Review. 'Industrial Design' Magazine. Package Design Award.
20th Annual Design Review. 'Industrial Design' Magazine. Graphic Design Award.
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PUBLIC SERVICE:

NASAD Accreditation Review Team for the Industrial Design program at Philadelphia University. Philadelphia, PA. March, 2011.

NASAD Accreditation Review Team for the Industrial Design program at Art Center College of Design. Pasadena, CA. March, 2008.

Independent reviewer of the College of Liberal Arts of Purdue University. April, 2006.

NASAD Accreditation Review Team for the Industrial Design program at Notre Dame University. April, 2004.

Organized, promoted, raised funds, supervised installation of the '100 Giants of Chair Design' exhibition in the Art/Design Department Gallery. This event raised approximately \$2000 for the KU Student Chapter IDSA. November, 1999.

Trained Accreditation Evaluator. National Association of Schools of Art and Design. October, 1999.

Advisory Board. 'Art In The Woods' Exhibition sponsored by the City of Overland Park, Kansas. 1995
Boy Scouts of America. Merit Badge Instructor/Volunteer. 1998-2002.

EXHIBIT 2



Industrial Designers Society of America (IDSA) Fact Sheet

- The Industrial Designers Society of America began in 1965 out of the merger of several organizations to include American Designers Institute (ADI), Industrial Designers Institute (IDI), Industrial Designers Education Association (IDEA), Society of Industrial Designers (SID) and American Society of Industrial Designers (ASID).
- IDSA's core purpose is to advance the profession of industrial design through education, information, community and advocacy.
- IDSA creates value by
 - Publishing *Innovation*, a quarterly professional journal of industrial design practice and education in America
 - Developing and organizing a joint national conference and education symposium each year, which brings together industrial designers, educators, business executives and students from all over the world
 - Hosting five district conferences annually where design practitioners, educators and students gather to consider the state of the profession
 - Creating and conducting the annual International Design Excellence Awards® (IDEA) and distributing information on the winners to the business, general, international and US design media
 - Hosting a website to communicate with the industrial design community, to keep members informed and to provide a place for unique content and dialogue to share
 - Distributing *designBytes* email that highlights the latest news and trends in the design world
 - Providing statistical research studies on professional practice, and the structure and financing of consulting and corporate design organizations
 - Advocating for the industrial design community to federal agencies and state governments
 - Serving as the primary information resource on design for national newspapers, magazines and television networks
 - Acting as a clearinghouse for design information requested by the general public
- To serve the interests and activities of its members, IDSA formed 17 special interest sections.
 - Communicative Environments
 - Consumer Electronics
 - Design History
 - Design for the Majority
 - Design Protection
 - Design Research
 - Diversity
 - Ecodesign
 - Furniture
 - Housewares
 - Human Interaction
 - Materials & Processes
 - Medical
 - Product Development
 - SAGE
 - Women in Design
 - Young Professional
- IDSA has five districts, 29 professional chapters in the US, China and Germany, and a number of student chapters throughout the nation.

NATIONAL:

Northeast District

- Boston
- Central N.Y.
- Mid-Atlantic
- New York
- Philadelphia
- Rhode Island

Southern District

- Atlanta
- Carolina
- Florida
- Texas

Central District

- Central Ohio
- Michigan
- Northern Ohio
- Southern Ohio
- Western Pennsylvania

Midwest District

- Chicago
- Indiana
- Kansas City
- St. Louis
- Wisconsin

West

- Arizona
- Los Angeles
- Northwest
- Oregon
- Rocky Mountain
- San Francisco
- Silicon Valley

INTERNATIONAL:

- China Chapter
- Munich Chapter

Additional IDSA Facts:

- As of January 2012, IDSA's total membership is over 3,000. IDSA's membership is made up of US-based design consultants, corporate designers and designer educators (66 percent); students (28 percent); affiliates (4 percent) and international members (2 percent).
- IDSA members are present in every major design office and design consultancy.
- IDSA's membership shapes the human experience of products through their work in diverse product categories such as computers (Apple, Microsoft, Hewlett-Packard, Dell, IBM), consumer electronics (Nokia, Motorola, Bose, Garmin, T-Mobile, Samsung), transportation (Volvo, Honda, Cessna), medical equipment (Bayer, GE Healthcare, Ethicon Endosurgery, Philips), furniture (Steelcase, Herman Miller, Hayworth), housewares and home goods (Whirlpool, Tupperware, Kohler), toys (Radio Flyer, Mattel, Hasbro, Fisher-Price) and industrial equipment (Black + Decker, Crown, CCI, TTI).
- According to Design Intelligence's *Almanac of Architecture & Design 2011*, there are over 1,900 design firms in the US. IDSA estimates that in the US there are between 15,000 to 18,000 practicing design professionals. IDSA lists 61 schools that have industrial design programs.
- IDSA is a member of the International Council of Societies of Industrial Design (Icsid), a global body representing over 50 countries.
- IDSA participates in the US Design Policy Council, The Designers Accord and the Living Principles Initiatives.

About Industrial Design

Industrial design (ID) is the professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer.

Industrial designers develop these concepts and specifications through collection, analysis and synthesis of data guided by the special requirements of the client or manufacturer. They are trained to prepare clear and concise recommendations through drawings, models and verbal descriptions.

Industrial design services are often provided within the context of cooperative working relationships with other members of a development group. Typical groups include management, marketing, engineering and manufacturing specialists. The industrial designer expresses concepts that embody all relevant design criteria determined by the group.

The industrial designer's unique contribution places emphasis on those aspects of the product or system that relate most directly to human characteristics, needs and interests. This contribution requires specialized understanding of visual, tactile, safety and convenience criteria, with concern for the user. Education and experience in anticipating psychological, physiological and sociological factors that influence and are perceived by the user are essential industrial design resources.

Industrial designers also maintain a practical concern for technical processes and requirements for manufacture; marketing opportunities and economic constraints; and distribution sales and servicing processes. They work to ensure that design recommendations use materials and technology effectively, and comply with all legal and regulatory requirements.

In addition to supplying concepts for products and systems, industrial designers are often retained for consultation on a variety of problems that have to do with a client's image, such as product and organization identity systems, development of communication systems, interior space planning and exhibit design, advertising devices and packaging and other related services. Their expertise is sought in a wide variety of administrative arenas to assist in developing industrial standards, regulatory guidelines and quality control procedures to improve manufacturing operations and products.

Industrial designers, as professionals, are guided by their awareness of obligations to fulfill contractual responsibilities to clients, to protect the public safety and well-being, to respect the environment and to observe ethical business practices. In conclusion, designers' unique way of thinking and processes are called into play to solve business problems as well as creating physical products.

###

EXHIBIT 3



US00D500646S

(12) **United States Design Patent** (10) **Patent No.:** **US D500,646 S**
Butler, Sr. (45) **Date of Patent:** **** Jan. 11, 2005**

(54) **TOOL HANDLE**(76) **Inventor:** **Kenneth Butler, Sr.**, Box 23, Munyan Rd., Putnam, CT (US) 06260(**) **Term:** **14 Years**(21) **Appl. No.:** **29/182,172**(22) **Filed:** **May 21, 2003****Related U.S. Application Data**

(62) Division of application No. 08/421,220, filed on Apr. 13, 1995, now abandoned.

(51) **LOC (7) Cl.** **08-05**(52) **U.S. Cl.** **D8/29; D8/107**(58) **Field of Search** D8/14, 29, 82, D8/83, 107; 81/177.1, 177.2, 177.85, 58.1, 489, 124.4(56) **References Cited****U.S. PATENT DOCUMENTS**

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 D475,589 S * 6/2003 Wilkinson D8/29
 6,604,441 B2 * 8/2003 Lin 81/177.2

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Primary Examiner—Philip S. Hyder(74) *Attorney, Agent, or Firm*—Dougherty, Clements, Hofer & Bernard(57) **CLAIM**

The ornamental design for a tool handle, as shown and described.

DESCRIPTION

FIG. 1 is perspective view of a tool handle, showing my new design;

FIG. 2 is a left end view thereof;

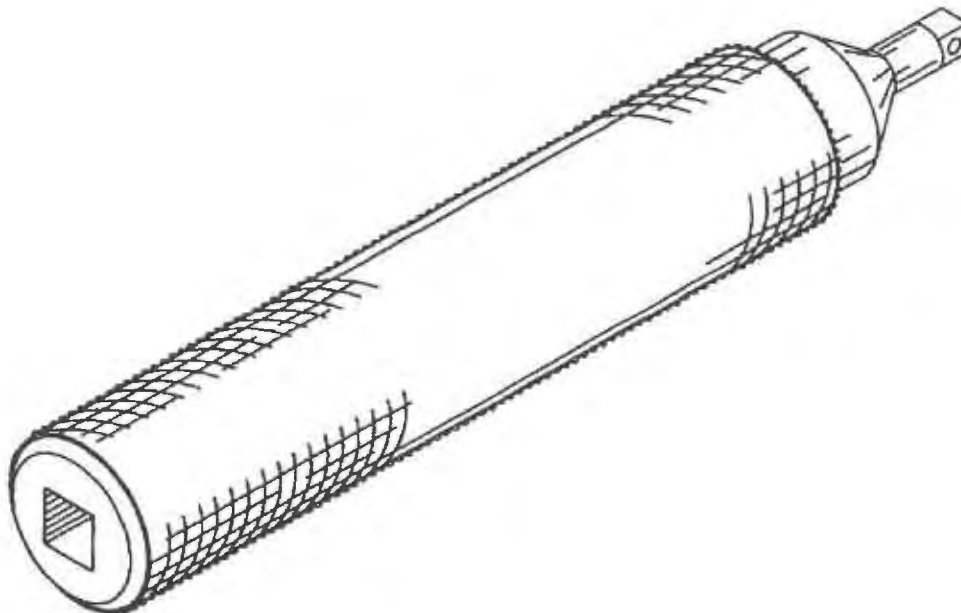
FIG. 3 is a front view thereof;

FIG. 4 is a right end view thereof;

FIG. 5 is a back view thereof;

FIG. 6 is a rear view thereof; and,

FIG. 7 is a bottom view thereof.

1 Claim, 3 Drawing Sheets

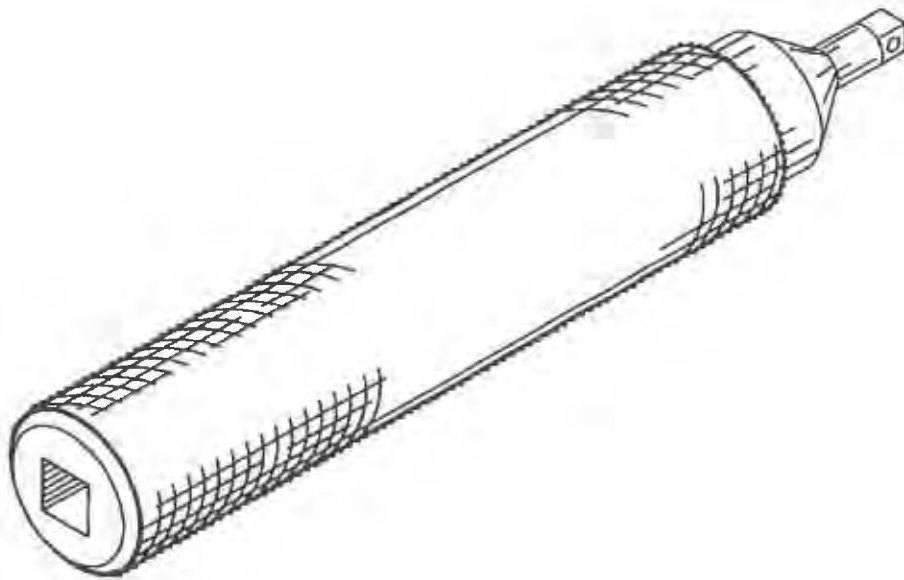
U.S. Patent

Jan. 11, 2005

Sheet 1 of 3

US D500,646 S

Fig. 1



U.S. Patent

Jan. 11, 2005

Sheet 2 of 3

US D500,646 S

Fig. 2

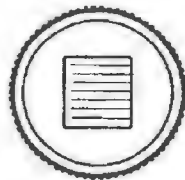


Fig. 3

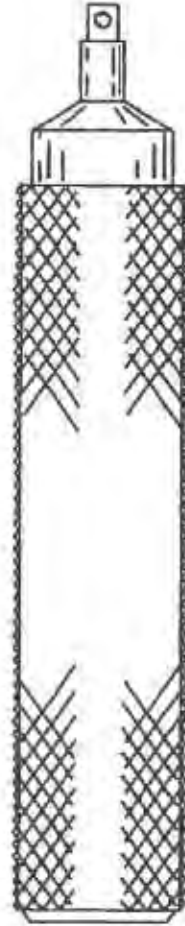


Fig. 4

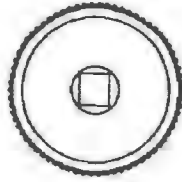
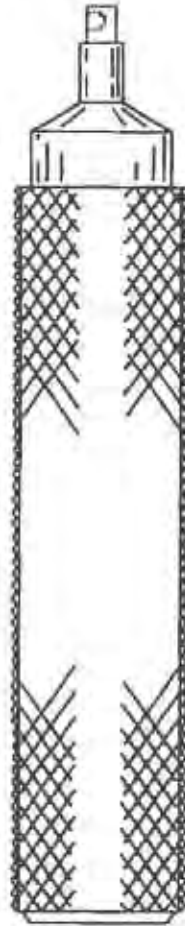


Fig. 5



U.S. Patent

Jan. 11, 2005

Sheet 3 of 3

US D500,646 S

Fig. 6

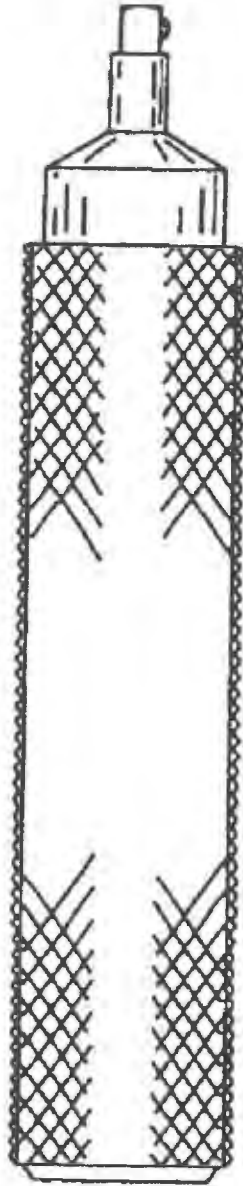


Fig. 7

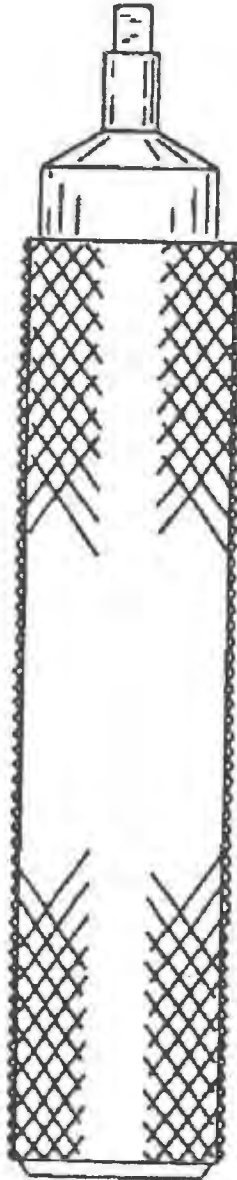


EXHIBIT 4

(12) **United States Design Patent**
Wilkinson

(10) **Patent No.:** **US D475,589 S**
(45) **Date of Patent:** **** Jun. 10, 2003**

(54) **SOCKET TOOL**

(76) Inventor: **Kenneth C. Wilkinson**, 10650 Nadia Ave., Orlando, FL (US) 32825
(**) Term: **14 Years**

(21) Appl. No.: **29/157,276**
(22) Filed: **Mar. 14, 2002**
(51) **LOC (7) Cl.** **08-05**
(52) **U.S. Cl.** **D8/29**
(58) **Field of Search** D8/21, 28, 29; 81/121.1, 124.3, 124.4, 125, 177.1, 177.2, 177.85, 436, 177.6, 119

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D390,432 S * 2/1998 Shaffer D8/29
5,813,296 A * 9/1998 Hoff et al. 81/124.4
D409,062 S * 5/1999 Braley D8/29

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Primary Examiner—Raphael Barkai

(57) **CLAIM**

The ornamental design for the socket tool, as shown and described.

DESCRIPTION

FIG. 1 is a front elevational view of the socket tool showing my new design;
FIG. 2 is a rear elevational view thereof;
FIG. 3 is a right side elevational view thereof, the left side elevational view being identical;
FIG. 4 is a top plan view thereof;
FIG. 5 is a bottom plan view thereof; and,
FIG. 6 is a perspective view taken from above and to the left.
The socket receptacle in the top surface bottoms on a flat recessed surface, but no claim is made to any particular depth of the bottom surface below the top surface.
The broken line showing of the interior depth in FIG. 1 is for illustrative purposes only and forms no part of the claimed design.

1 Claim, 3 Drawing Sheets



FIG 1

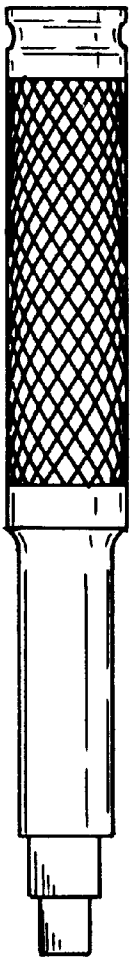


FIG 2

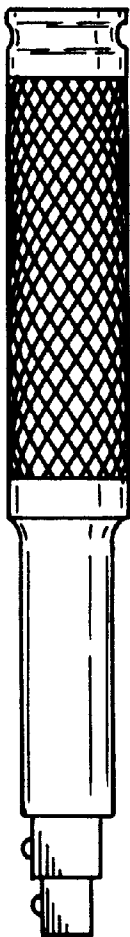


FIG 3



FIG 4



FIG 5

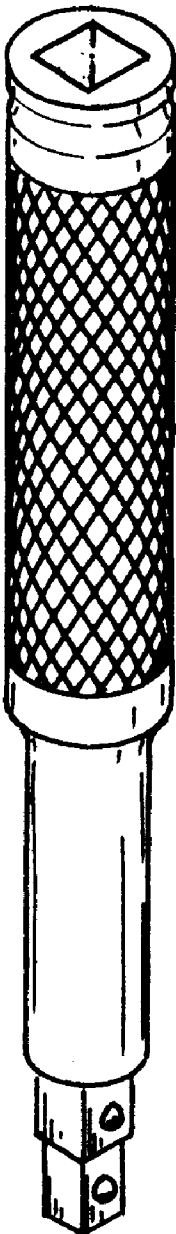


FIG 6

EXHIBIT 5

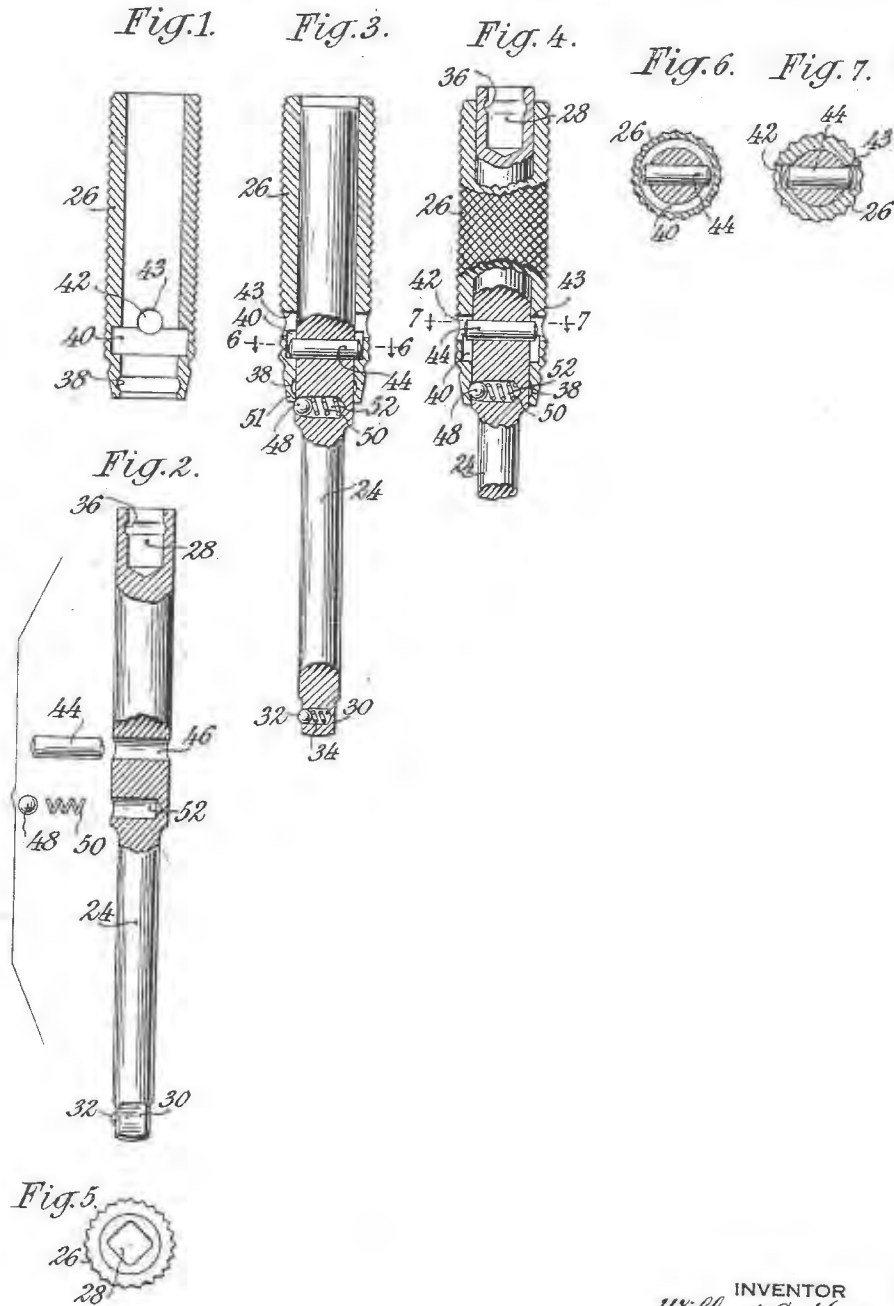
Feb. 23, 1937.

W. C. KRESS

2,071,543

REVOLVING GRIP TOOL

Filed Sept. 14, 1935



INVENTOR
 Willard C. Kress,
 BY
 Hauer, Myers & Manley
 ATTORNEYS.

Patented Feb. 23, 1937

2,071,543

UNITED STATES PATENT OFFICE

2,071,543

REVOLVING GRIP TOOL

Willard C. Kress, Kenmore, N. Y., assignor to
J. H. Williams & Co., Buffalo, N. Y., a corpora-
tion of New York

Application September 14, 1935, Serial No. 40,607

1 Claim. (Cl. 81-177)

The invention relates to revolving grip tools, and although the invention may be utilized with a variety of tools, it is described and illustrated herein as applied to extension pieces adapted for use with wrenches of the type commonly referred to as socket wrenches. These wrenches ordinarily comprise a socket for engaging a nut, and a handle for engaging the socket and applying torque thereto for the purpose of rotating the nut to tighten or loosen it.

It very frequently occurs that because of cramped quarters or obstructions adjacent to the nut to be rotated, the handle may not be applied directly to the socket engaging the nut, or may not be conveniently operated when so applied. Under such conditions it is customary to provide an extension piece, in the form of a shank of suitable length, one end of which engages the socket and the other end of which extends clear of the obstruction and is engaged by the handle. Thus, by means of the handle, torque is manually applied directly to such extension piece, thence to the socket, and finally to the nut, whereby the latter is rotated.

It has been found advantageous to provide such an extension piece with a grip in the form of an outer sleeve mounted upon the shank in such manner that the two said parts may rotate relatively to each other about a common axis. Thus, in practice, the shank may be freely rotated while the grip, which remains firmly within the grasp of the mechanic, will serve as a means of holding the assemblage steady, whereby it may be operated with greater facility.

One of the objects of my invention is to provide such an extension wherein the outer sleeve or grip may, in a convenient manner, be selectively rendered either rotatable to serve merely as a steady medium when the torque is applied by means of a handle, or non-rotatable to permit the use of the extension piece as an independent means for manually applying torque to the socket.

Another object of my invention is to provide such an extension piece having its parts so arranged that the forces present in assembling it with a handle or other torque-applying means have a direct tendency to render the grip freely rotatable to serve as a steadying grip in such assemblage, while the forces present in assembling it with a socket have a direct tendency to lock the grip against rotation whereby the extension piece may function as an independent torque-applying means in such assemblage.

Still further objects of my invention will be-

come apparent upon a reading of the following specification.

These objects are achieved by so disposing the rotatable sleeve or grip on the shank of the extension piece that the two may be longitudinally moved relatively to each other to a limited extent and by providing each of the two said parts with coacting portions which are in locking engagement to lock the said parts against relative rotation when the grip is at one extreme position and are disengaged when the grip is at the other extreme position to render the two said parts independently rotatable.

The invention is more particularly described in the following specification and illustrated in the accompanying drawing, in which—

Figure 1 is a longitudinal section of a grip for an extension piece of the character referred to herein;

Fig. 2 is a side elevation of the shank of an extension piece, partly in section;

Fig. 3 is a side view, partly in elevation and partly in section, of an assembled extension piece, the grip being in rotatable position;

Fig. 4 is a side view, somewhat similar to Fig. 3, of the grip end of the device but showing the grip in a position in which it is locked against rotation relatively to the shank;

Fig. 5 is an end elevation of the grip end of the assembled device;

Fig. 6 is a cross-section on the line 6-6 of Fig. 3;

Fig. 7 is a cross-section on the line 7-7 of Fig. 4.

In the embodiment described herein, there is provided a shank 24 of bar material of sufficient strength to withstand the torsional stresses to which it might be subjected and of a suitable length to permit its use to transmit torque to nuts or bolt heads in such close quarters that they may not be tightened or loosened with the usual socket and handle.

The upper or grip end of the shank 24 is round in cross-section and extends within a cylindrical grip member 26, the diameter of the bore of which is slightly larger than the diameter of the grip end of the shank to permit relative rotation of the two about the longitudinal axis of the shank. The outside of the grip member is knurled to afford a suitable gripping surface.

The shank is provided with a female connecting recess 28 in its grip end and a male connecting portion 30 in its other end. The recess 28 and the portion 30 are square in cross-section and are, respectively, adapted to engage a comple-

mentally shaped male portion of a handle and female recess in a socket to transmit torque therebetween. A spring-pressed ball 32 and a compression spring 34 to urge the ball outwardly are imbedded in a round hole extending laterally into the male connecting portion 30. A similar ball and spring arrangement is provided in the male connecting portion of the handle, the showing thereof being omitted to avoid duplication. The ball 32 is adapted to engage a suitable groove in a socket whereby to prevent unintentional disconnection of the socket from the shank. The said groove is similar to the groove 36 provided in the female connecting recess 28 in the grip end of the shank, and the co-action of the ball and groove is similar in the connections at each end of the shank. While these complementally shaped connecting portions and recesses are herein described as being square in cross-section, they may obviously be triangular, hexagonal, or of any form in which they may not rotate relatively to each other when connected.

Referring particularly to Figs. 1, 3 and 4, the grip 26 is provided with an internal annular groove 38 near the lower end thereof and an internal annular recess 40 at a point intermediate the ends of said grip. Two similar round holes 42 are drilled through the grip, these holes being diametrically opposite to each other and disposed immediately above and communicating with the recess 40, thus forming notches 43 in the interior wall of the grip. A lock pin 44 of circular cross-section is forced into and frictionally held in a hole 46 extending diametrically through the shank, the diameter of said lock pin being less than the diameters of the holes 42 in the grip, and the length of said lock pin being greater than the diameter of the grip end of the shank and less than the diameter of the annular recess 40. A spring-pressed ball 48 and a compression spring 50 to urge the said ball outwardly are imbedded in a round hole 52 extending radially into but not completely through the shank.

The grip 26 is assembled upon the shank 24 by first permanently imbedding the spring 50 and the ball 48 in the hole 52 and then sliding the grip over the top of the shank and to the position shown in Fig. 4, wherein the ball 48 is urged outwardly by the spring 50 into the annular groove 38 and the hole 46 in the shank registers with the holes 42 in the grip. The lock pin is thereupon inserted through a hole 42 and forced into the hole 46, fitting so tightly in the latter hole that it is frictionally held therein, with the ends of the said lock pin extending slightly beyond the rounded surface of the shank.

Upon being assembled, the several parts of the device will be disposed as shown in Fig. 4, and the grip and shank will be relatively non-rotatable as the ends of the lock pin 44 extend partly into the holes 42 of the grip and are restricted from rotative movement by the walls of the holes 42, as best seen in Fig. 7. The several parts are held in these relative positions by the seating of the spring-pressed ball 48 in the annular groove 38.

The grip may be rendered rotatable by sliding it upwardly to the position shown in Fig. 3, wherein the ends of the lock-pin 44 are disposed entirely in the annular recess 40 and are free to be rotated therein, as best seen in Fig. 6. The several parts are held in these relative positions

by the engagement of the spring-pressed ball 48 with the turned-in shoulder 51 at the lower end of the grip and by the engagement of the lock pin 44 with the lower wall of the annular recess 40. In moving the grip from one extreme longitudinal position to the other, the ball 48 momentarily recedes entirely into the hole 52 under the pressure of the shoulder 51 as said shoulder 51 passes over the ball. It will be seen that the relative longitudinal movement of the grip and shank is limited in the one direction by the engagement of the lock pin 44 with the upper walls of the holes 42, and in the other direction by the engagement of said lock pin with the lower wall of the annular recess 40.

It should be observed that an extension piece of the type described may serve a dual purpose. If desired, it might be utilized as an independent torque-applying device wherein the grip should be non-rotatable, and, when so used, the force applied to the grip 26 in pressing the square male portion 30 into a complementally shaped recess in a socket would urge the said grip to the desired locked or non-rotatable position shown in Fig. 4. On the other hand, the device might be used as an extension piece in conjunction with an auxiliary torque-applying means such as a handle, in which arrangement the grip should be independently rotatable, and, when so used, the force applied to the grip 26 in pressing the recess 28 into engagement with a complementally shaped male portion on the handle, would urge the said grip to the desired rotatable position shown in Fig. 3. Thus, in service, the forces exerted upon the grip 26 in connecting the device to other devices to perform a particular function, have a natural tendency to cause the grip to assume the proper position, with respect to rotatability, for performing such function.

While it is highly desirable, it is not necessary to the invention that the forces present in connecting the device with other devices for a particular use should tend to properly adjust the device with respect to rotatability, as hereinbefore set forth.

It will be obvious from the foregoing description that a variety of means may be provided for locking the relatively rotatable parts of a variety of tools against rotation without departing from the invention as defined in the appended claim.

What I claim is:

A rotatable grip tool comprising a shank, a sleeve disposed about a portion of the shank, and means for rendering the two relatively rotatable or non-rotatable at will, said means comprising an inner annular recess in the sleeve, a hole extending through a wall of the sleeve and communicating with said recess, a diametrical bore in the shank, and a pin adapted to be fixed into said bore, with a portion protruding therefrom, the bore and the hole being so positioned and of such dimensions that the pin may be inserted into the said bore through the said hole, the protruding portion of the pin having such dimensions that it is substantially clear of the sleeve and may rotate freely within said recess when the shank and sleeve are in one relative longitudinal position and that it is in locking engagement with the walls of the said hole when the shank and sleeve are in another relative longitudinal position.

WILLARD C. KRESS.

EXHIBIT 6





Fig. 373. Williams M-110 9/32-Drive Convertible Handle and Extension, ca. 1933-1937.

Fig. 373 shows an early 9/32-drive Williams M-110 convertible handle and extension, stamped with "Williams" and the W-Diamond logo on the shank, and with "Made in U.S.A." and "Pat. Pend'g" on the reverse.



Fig. 376. Williams NM-110 1/4-Drive Convertible Handle and Extension, ca. 1942-1945.

the reverse.

Fig. 376 shows a Williams NM-110 convertible handle and extension, the 1/4-drive equivalent to the 9/32-drive M-110 tool shown above. The shank is stamped with "Williams" and the W-Diamond logo, with "Made in U.S.A." and "Patented" on

EXHIBIT 7

United States Patent

Wolfe

[15] 3,650,165

[45] Mar. 21, 1972

[54] RATCHET TOOL

[72] Inventor: Paul W. Wolfe, R.R. #1, North Webster, Ind. 46555

[22] Filed: Nov. 21, 1969

[21] Appl. No.: 878,661

[52] U.S. Cl.81/63.2, 81/58.1

[51] Int. Cl.B25b 13/46, B25b 13/00

[58] Field of Search.....81/58.1, 63.2

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376,584	1/1888	Cone.....	81/58.1

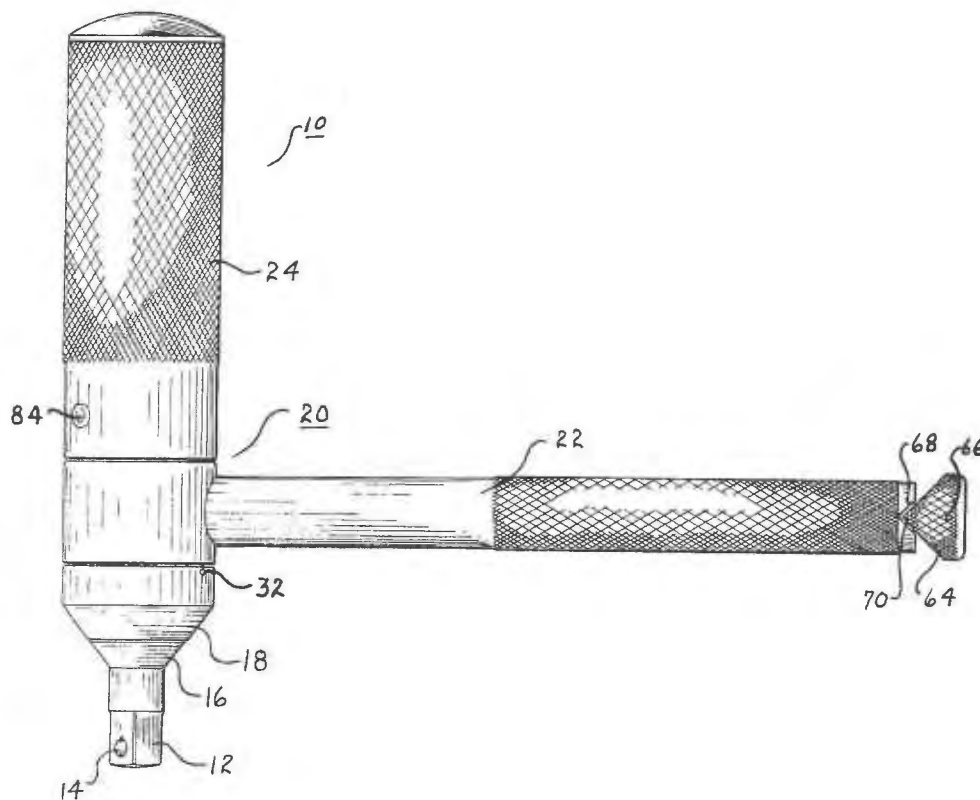
Primary Examiner—James L. Jones, Jr.

Attorney—Hobbs & Green and Kemon, Palmer and Estabrook

[57] ABSTRACT

A ratchet tool having a radial handle operatable in either direction and adapted to be placed in a neutral position, and an axial handle which can rotate in either direction when the radial handle is in its neutral position and in the effective direction of the radial handle when the latter handle is in operating engagement with the ratchet mechanism. The radial handle contains a longitudinal shaft and a knob at the end thereof for controlling the ratchet mechanism.

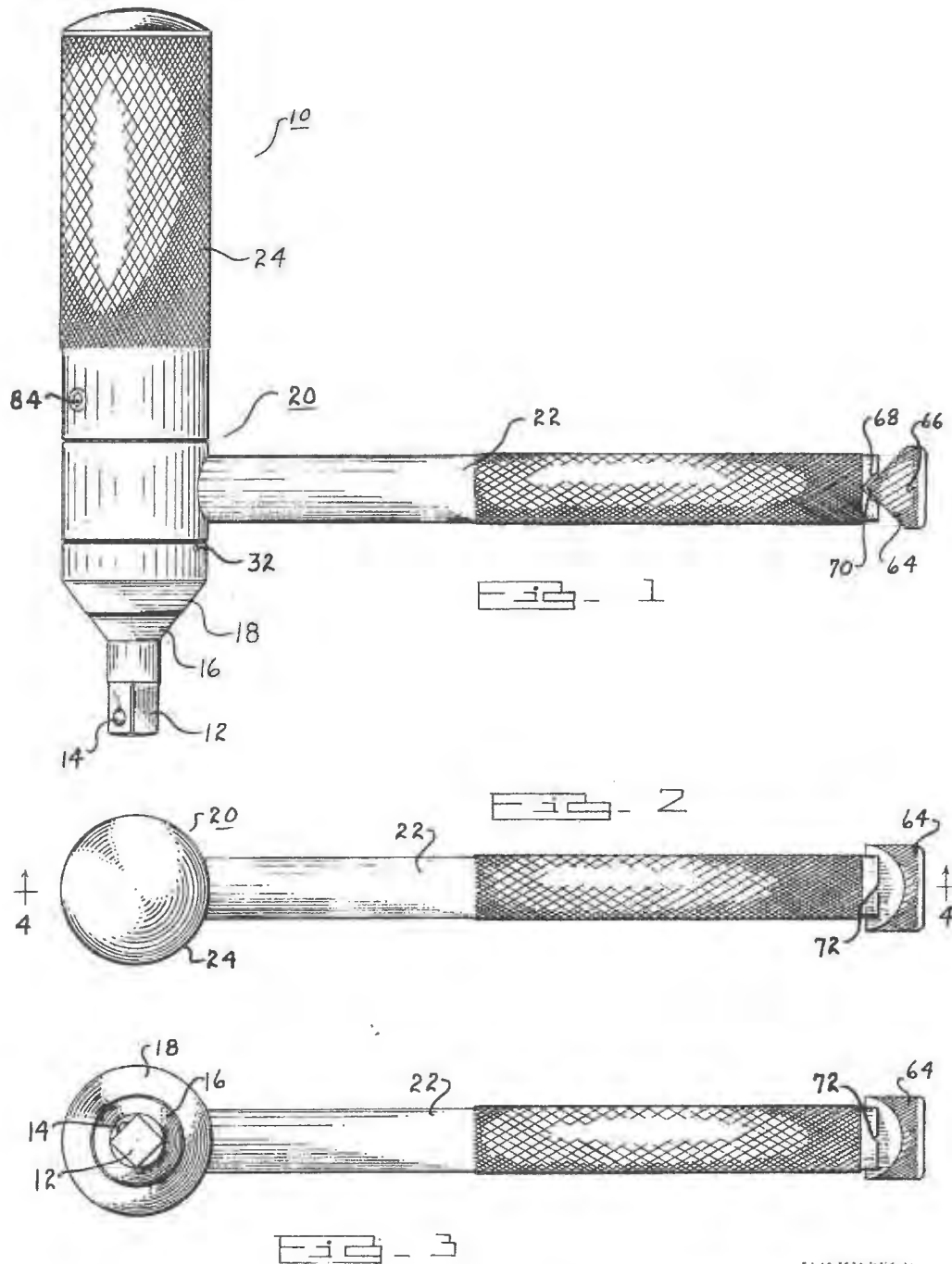
4 Claims, 7 Drawing Figures



PATENTED MAR 21 1972

3,650,165

SHEET 1 OF 2



INVENTOR.

PAUL W. WOLFE

BY

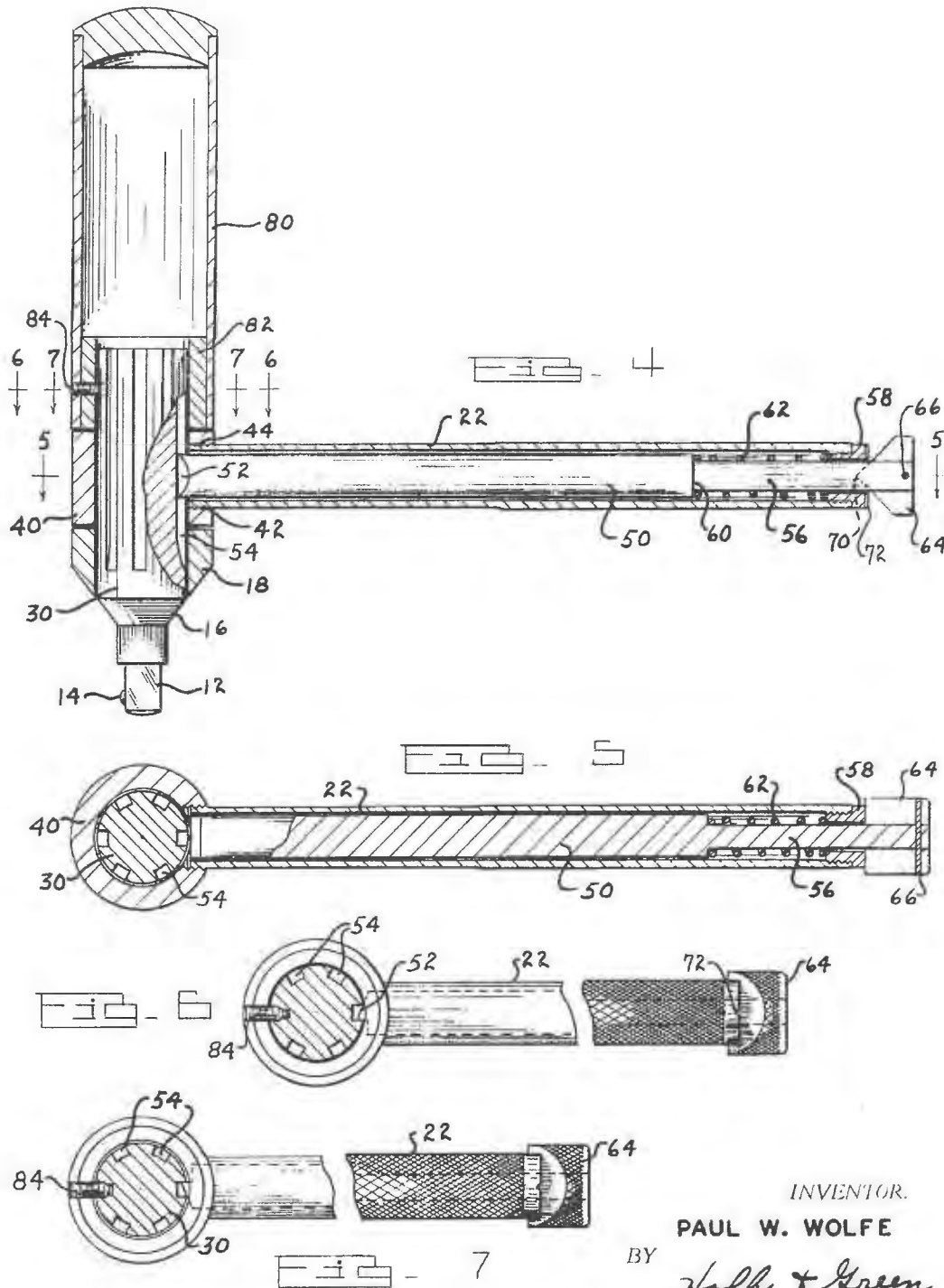
Hobbs & Green

ATTORNEYS

PATENTED MAR 21 1972

3,650,165

SHEET 2 OF 2



INVENTOR.

PAUL W. WOLFE

BY

Hobbs & Green

ATTORNEYS

3,650,165

1

RATCHET TOOL

Ratchet tools such as wrenches are extensively used and normally are convenient to operate in either tightening or loosening bolts, nuts and screws, and are particularly advantageous and time saving in close or confined places where only short strokes of the wrench are possible. However, in the initial part of the tightening operation, the nut or screw is often rather loose and easily turned, such that the full advantage of the wrench cannot be utilized and yet the full manipulation of the wrench is required during this initial stage with the conventional wrench, thus resulting in a time consuming step which reduces the efficiency of the overall tightening operation. Likewise, in loosening nuts and screws, only a moderate amount of force is normally required after the initial loosening step has been performed, and hence the full advantage of the wrench is not utilized, and yet since a tool is still required, the wrench is used inefficiently to complete the nut or screw removing operation. It is therefore one of the principal objects of the present invention to provide a ratchet tool having in addition to the conventional laterally extending handle or arm, an axially extending handle which can be easily rotated independently of the radial handle to tighten or loosen the nut, screw or bolt rapidly when relatively little force is required to perform the operation, and which permits the tool to be used in the normal manner when substantial force is required to perform the operation.

Another object of the invention is to provide a ratchet tool, such as a wrench, having both a radial and an axial operating handle, in which the radial handle can easily be controlled to render it operative in either direction or to render it inoperative so that the tool can be fully controlled by the axial handle in either direction.

Still another object is to provide a ratchet tool of the aforesaid type having a radial handle with a ratchet control knob or part which is located at a conveniently reached position at the outer end of the handle for both reversing the operation of the ratchet and rendering the ratchet inoperative, and which can be easily operated to obtain the desired ratchet setting and does not interfere with the conventional operation of the radial handle after a setting has been made.

A further object of the invention is to provide a relatively simple, compact ratchet tool in which the operating mechanism is substantially fully enclosed and which is so constructed and designed that it can be effectively used in limited areas and confined spaces.

Additional objects and advantages of the invention will become apparent from the following description and accompanying drawings, wherein:

FIG. 1 is a side elevational view of the present ratchet tool;

FIG. 2 is a top plan view of the tool shown in FIG. 1;

FIG. 3 is a bottom plan view of the present tool;

FIG. 4 is a vertical cross-sectional view taken on line 4—4 of FIG. 2;

FIG. 5 is a horizontal cross-sectional view of the tool, the section being taken on line 5—5 of FIG. 4;

FIG. 6 is a partial cross-sectional and top plan view of the present tool, the section being taken on line 6—6 of FIG. 4, showing one operating position of the tool; and

FIG. 7 is a partial cross-sectional and top plan view of the present tool, the section being taken on line 7—7 of FIG. 4, showing another operating position of the tool.

Referring more specifically to the drawings, numeral 10 indicates generally the present ratchet tool having a receiver 12 for a socket wrench or the like held on the rectangular receiver by a spring loaded ball detent 14. The receiver is formed integrally with a metal base 16 which extends through a collar 18 into the body generally indicated by numeral 20. The wrench is operated by a radial handle 22 and an axial handle 24 connected to base 16 and receiver 12 within the body in the manner more fully described hereinafter. While the receiver is for a socket wrench, as illustrated in the drawings, the type of tool may be one of a number of different types in addition to the socket wrench, including any one of a number

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of types of screw drivers and other types of wrenches. The receiver as shown is merely for the purpose of illustrating one type to which the present ratchet tool structure is particularly adapted.

Base 16 is connected to and formed integrally with a spline shaft 30 to which collar 18 is rigidly connected by a pin 32 extending through the collar into the spline shaft. Rotatably mounted on the shaft above collar 18 is a cylindrical member 40 adapted to rotate relative to both collar 18 and spline shaft 30. Handle 22 is secured to cylindrical member 40 by a threaded portion 42 on the inner end of the handle being threaded into a hole 44 in the side of member 40.

The handle is of tubular construction having a shaft 50 mounted therein, the inner end of the shaft having a beveled end 52 forming a pawl for engaging the sides of grooves 54 of spline shaft 30 and thereby forming an operative connection between handle 22 and the spline shaft. Shaft 50 has a reduced diameter portion 56 which extends through the outer end of the tubular portion of handle 22 and through a collar 58 which is threadably received in the end of the tubular portion of the handle. A shoulder 60 is provided between the main portion of the shaft and the reduced diameter portion 56 and a spring 62 reacting between the shoulder and the inner end of collar 58 urges the beveled end 52 on the inner end of shaft 50 into engagement with the sides of the grooves of the spline shaft.

The beveled end 52 of the shaft may be positioned in either direction relative to the grooves of the spline shaft by rotating the shaft using knob 64 which is secured to the outer end of the shaft by a pin 66 extending through the knob and shaft. The shaft is held in its adjusted position, i.e., with the beveled end 52 facing in one or the other direction, by the opposed slots 68 in collar 58 on opposite sides of shaft 50. The knob is beveled to form an inner point 70 for seating in these slots 68, thus retaining the shaft in its adjusted ratchet operating position. The point 70 seats in the slots 68 in either position of the beveled edge when the knob and shaft are turned 180 degrees. When the knob is turned 90 degrees, points 70 on opposite sides of the knob seat in slots 72 on opposite sides of the opening through collar 58. Slots 72 do not extend into the collar to the extent that slots 68 do, and hence when the point 70 is seated in slots 72 the shaft 50 is held in a retracted position. In this position the beveled edge 52 extends tangentially to the periphery of the spline shaft, and hence the beveled edge cannot seat in the grooves 54 of the spline shaft; thus the spline shaft can rotate in either direction without interference from the ratchet formed by beveled edge 52 and grooves 54. It is thus seen that by merely rotating the knob 90 degrees, the ratchet can be rendered fully inoperative, and by rotating the knob 180 degrees in either direction, the operation of the ratchet is reversed when the points of the knob are seated in slots 68. When the beveled end 52 is seated in one of the grooves 54 of the spline shaft, the handle, cylindrical member 40, and the spline shaft rotate together when the handle is moved angularly in the direction in the point of the beveled edge. When the handle is moved in the opposite direction, the beveled edge moves out of the groove in opposition to spring 62, permitting the handle and member 40 to move independently of the spline shaft.

Axial handle 24 shown in the drawings consists of cylindrical side walls 80 rigidly connected to the upper end of the spline shaft by a collar 82 and set screw 84 extending through side walls 80 and engaging the spline shaft at the bottom of one of the grooves 54, thus firmly holding the axial handle on the spline shaft and preventing relative rotation between the shaft and the handle.

Handles 22 and 24 and knob 64 are knurled, at least in part, for the purpose of forming an effective hand grip for the user of the tool. All of the parts of the tool are preferably constructed of steel and either of the handles may be varied in size and length to adapt the concept to tools used to perform various operations.

In the use of the present tool, as illustrated in the drawings, a socket is attached to receiver 12 and is held thereon by de-

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tent 14. The socket is then placed over a nut, for example, to be tightened. At this stage of the tightening operation the nut normally can be threaded on the bolt or stud with little force. Consequently, the ratchet, i.e., beveled edge 52, is withdrawn from grooves 54 by pulling knob 64 radially outwardly and turning it to the position at which point 70 seats in small slots 72. With the knob in this position, the beveled edge is held tangentially with respect to the periphery of the spline shaft which can then be freely rotated by the use of axial handle 24. As the axial handle is rotated, the spline shaft 30, base 16, receiver 12, and the socket on the receiver all rotate in unison, and since the handle 24 can be rotated rapidly, the nut is quickly threaded onto a bolt or stud. When the nut is lightly seated or when it encounters resistance, knob 64 is rotated in the direction to place the point of beveled edge 52 in one of the slots facing in the direction in which the spline shaft is being turned. The operator now operates the ratchet wrench in the conventional manner by oscillating the handle to and fro, causing the spline shaft to move in the tightening direction. When a nut, for example, is to be removed from a bolt or stud, the knob is turned to place the beveled edge 52 in the position to rotate the spline shaft in the loosening direction and force is then applied to the radial handle. After the nut has been loosened, it can be easily and quickly removed by the use of rotating handle 24.

Handle 24 can be rotated freely in either direction when point 70 is seated in slots 68 and can be easily rotated in the same direction as shaft 50 moves the spline shaft. Thus the knob can be set for any tightening or loosening operation and the axial handle 24 can be rotated in the direction to accomplish quick operation involving relatively light force, and handle 22 to apply the required force for either the final tightening or the initial loosening operation, and neither handle will

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interfere with the operation of the other.

While only one embodiment of the present invention has been described in detail herein, various changes and modifications may be made without departing from the scope of the invention.

I claim:

1. A ratchet tool comprising a body having a bore therein, a shaft in said bore having grooves in the periphery thereof, a means for connecting one end of said shaft to a work performing means, a member disposed around said shaft intermediate said body for rotary movement relative thereto, a handle extending radially from said member, a means having a part cooperating with said grooves to form a ratchet action therebetween, a shaft extending longitudinally through said handle and being connected at one end to said part, a spring urging said part into engagement with said first-mentioned shaft, a knob disposed at the outer end of said second-mentioned shaft for rotating the latter shaft and said part to reversed operating positions and to an inoperative position, spaced slots disposed at the end of said radial handle at 90 degrees to one another for receiving a portion of said knob, one of said slots being of less depth than the other of said slots for retaining said part in its inoperative position, and an axial handle connected to said first mentioned shaft and rotatable therewith for turning said work performing means.

2. A ratchet tool as defined in claim 1 in which said radial handle consists of a tubular shaped member.

3. A ratchet tool as defined in claim 1 in which said grooves are longitudinally arranged around the periphery of said first mentioned shaft.

4. A ratchet tool as defined in claim 1 in which said part has a beveled edge for seating in said grooves.

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EXHIBIT 8





















































































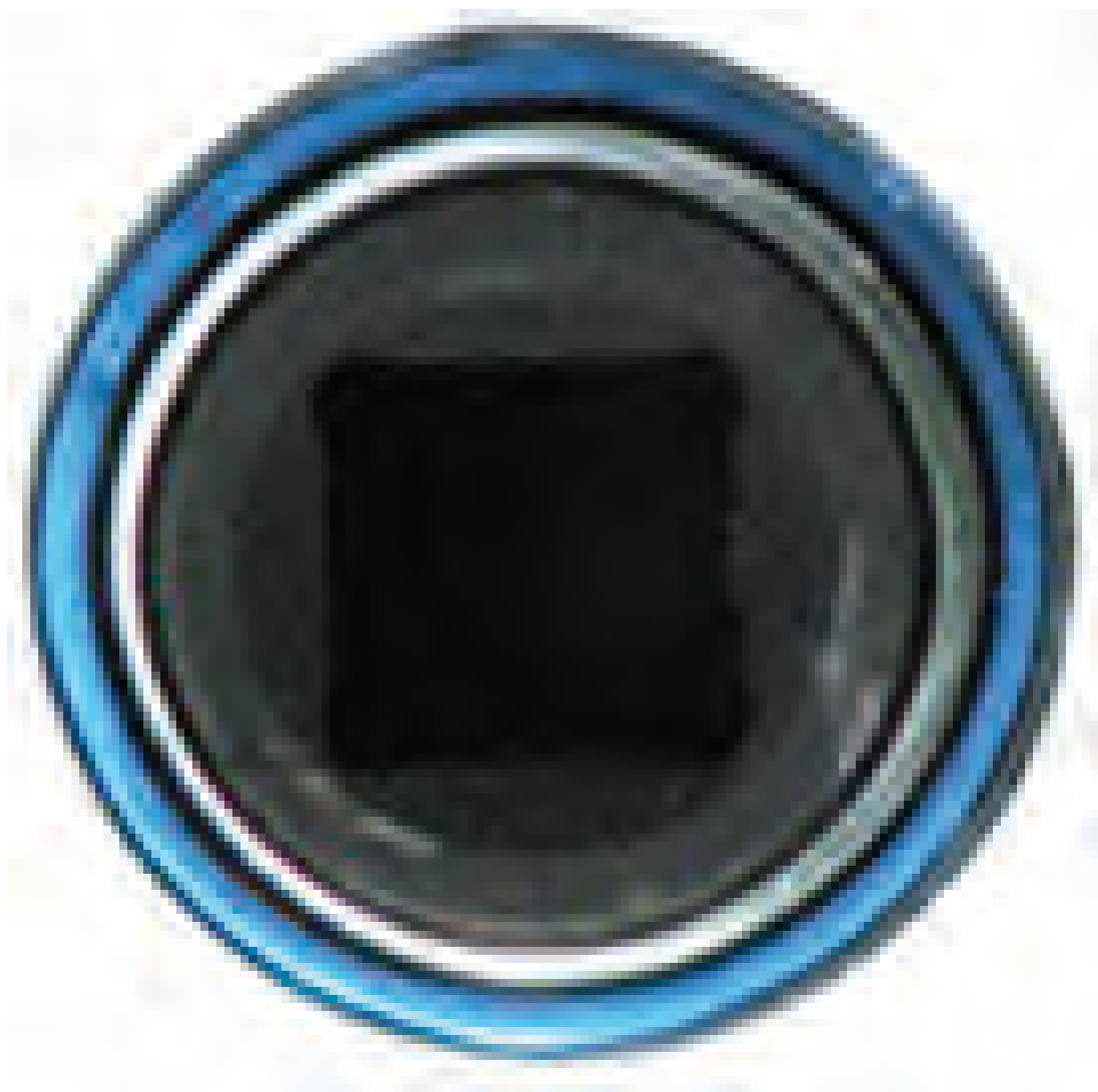














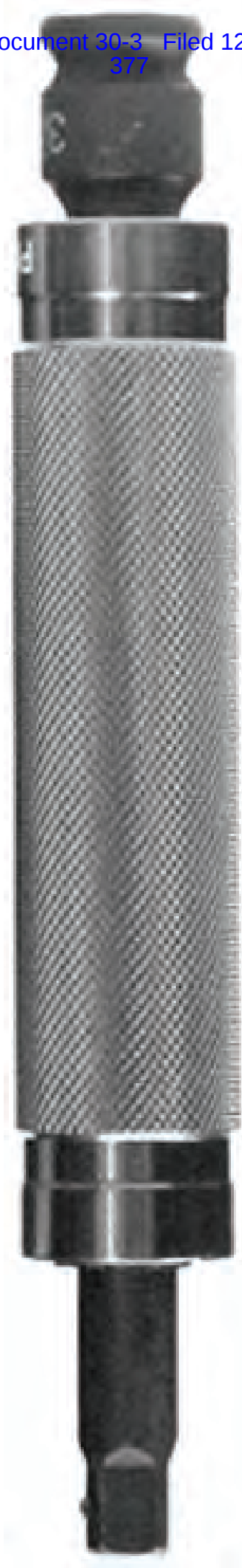






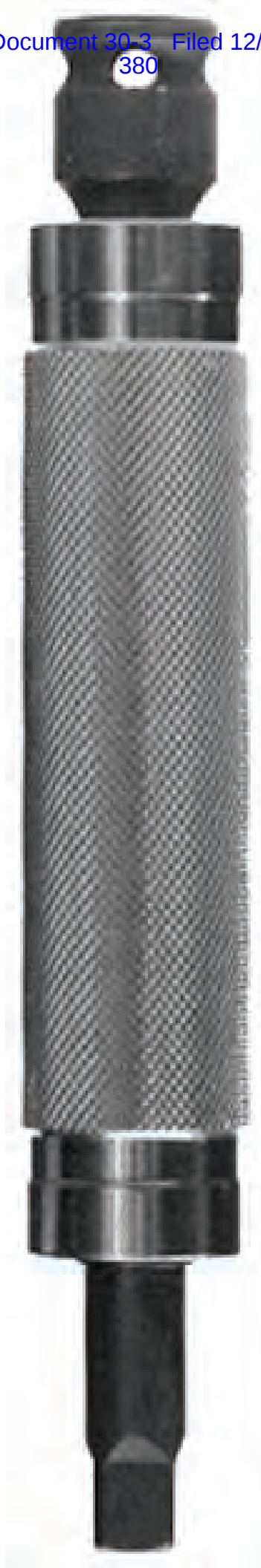




















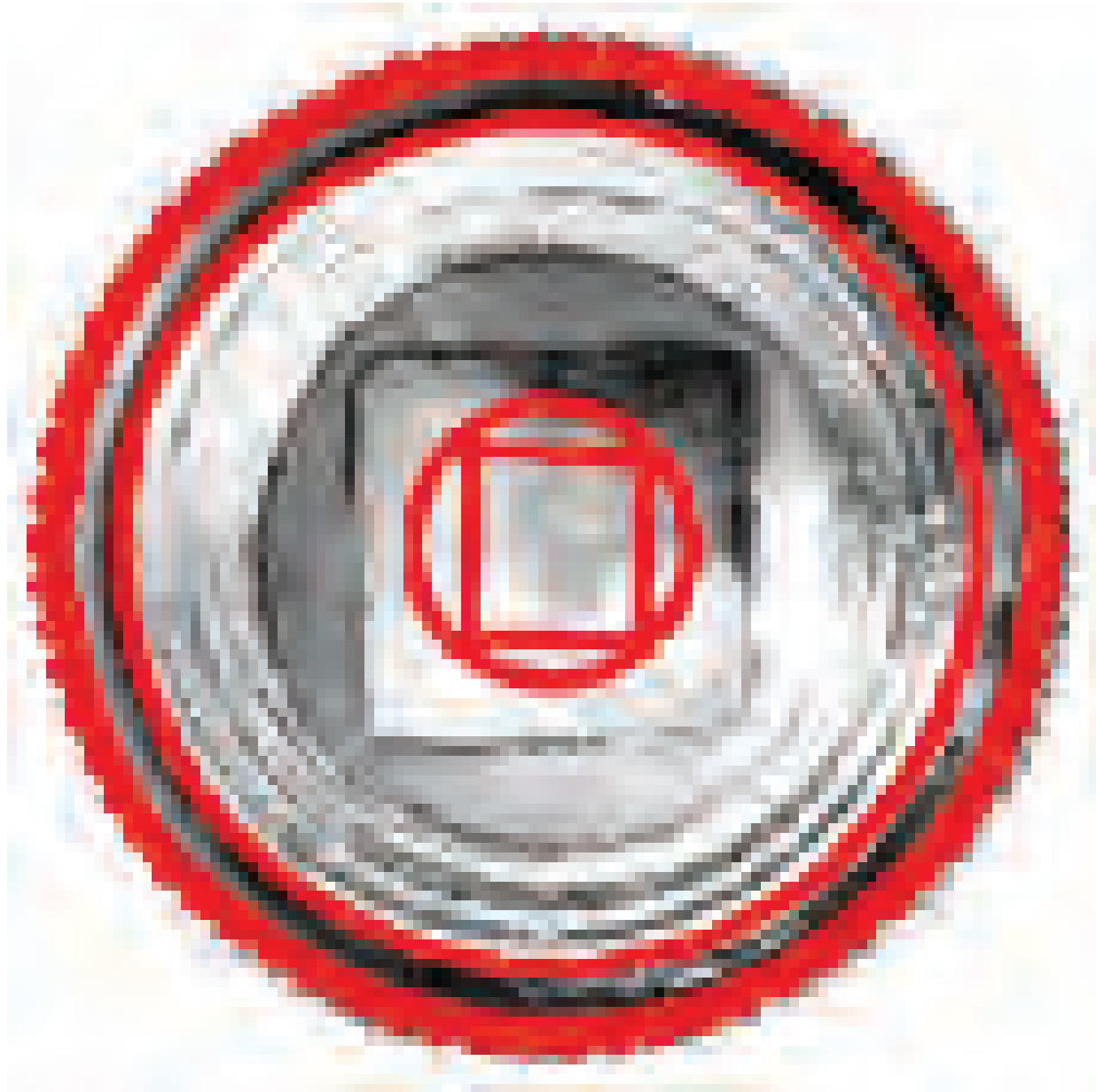




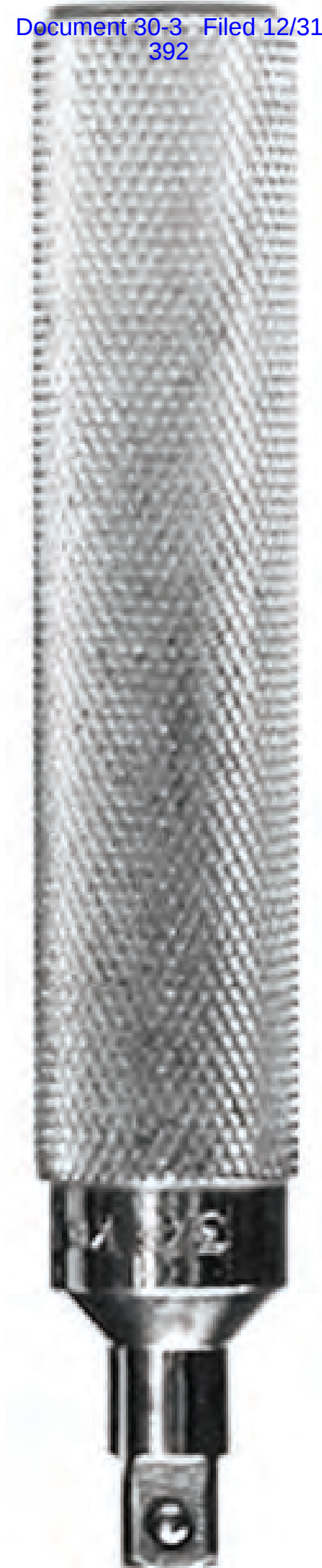






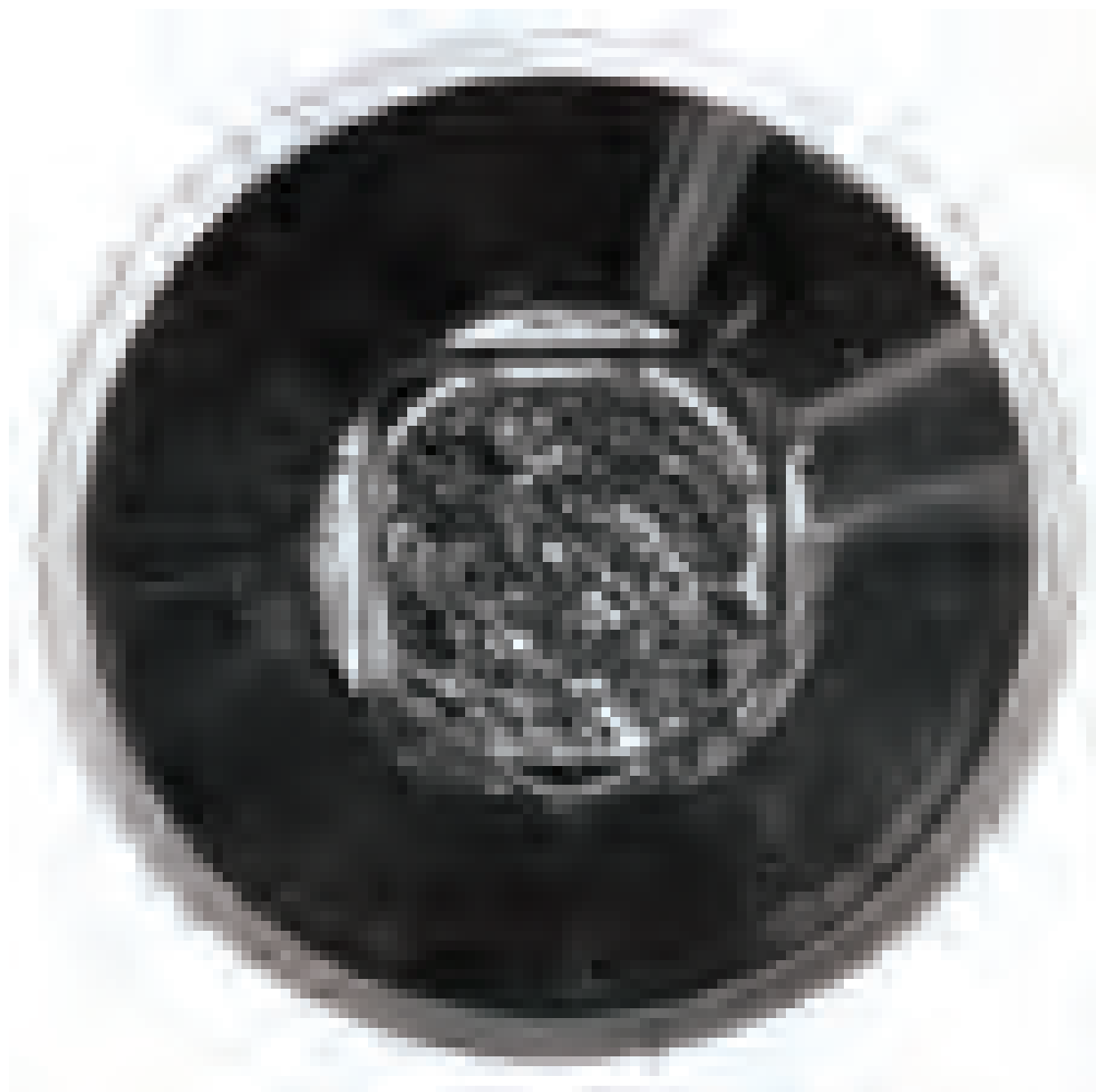






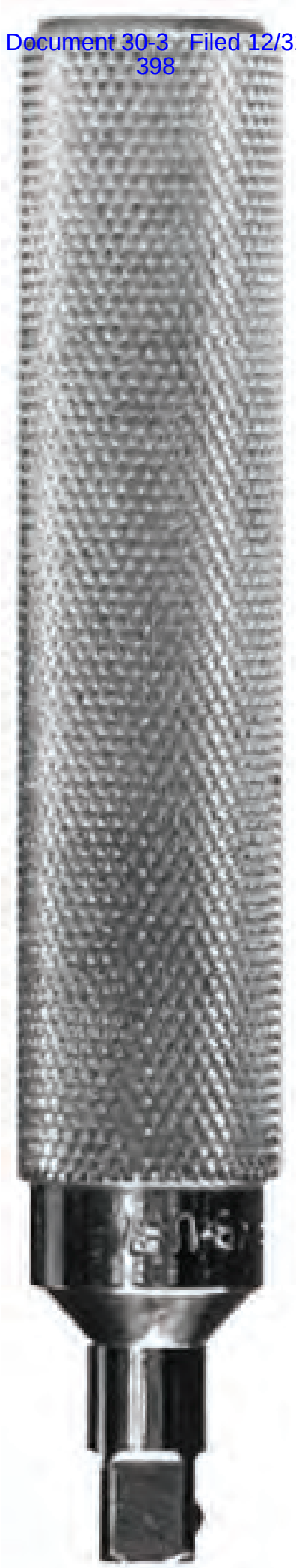






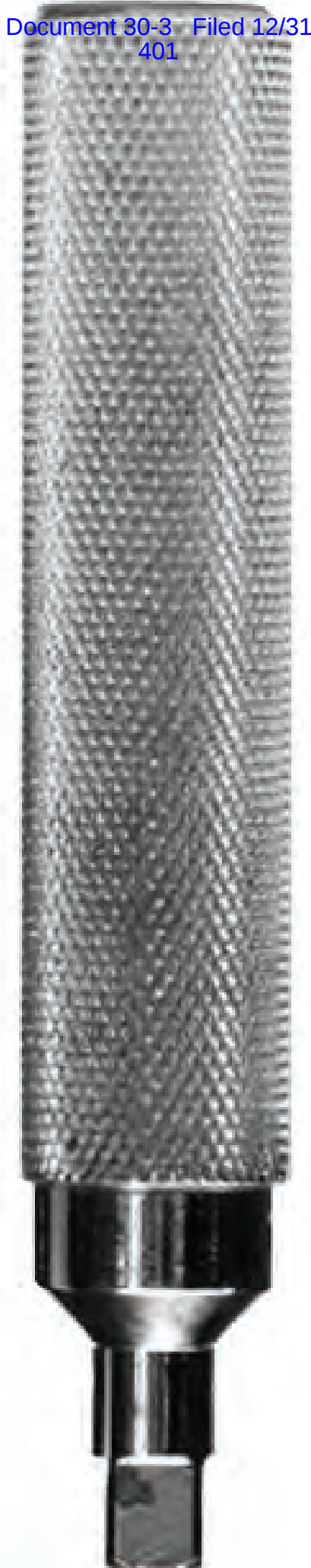
















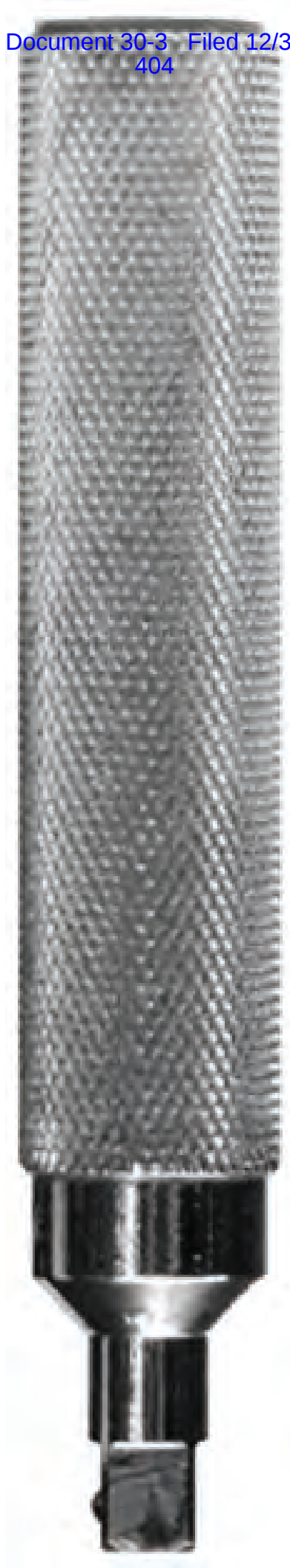






EXHIBIT 9

Snap-on SG-6 1/2-Drive 6 Inch Rotating-Grip Extension



Fig. 142A. Snap-on SG-6 1/2-Drive 6 Inch Rotating-Grip Extension, with Insets for Marking Detail, 1930.

Fig. 142A shows a 1/2-drive Snap-on SG-6 6 inch extension with a rotating grip, stamped with the Snap-on logo and model number on the shank, with a "0" date code for 1930 on the reverse.

The overall length is 6.1 inches, and the finish is chrome (or possibly nickel) plating.

<http://home.comcast.net/~alloy-artifacts/snapon-bluepoint-tools-p2.html>